

Economic and Revenue Forecast



Second Quarter
Fiscal Year 2013

November 2012



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

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Prepared by
David Chertudi, Lead Economist
Craig Calhoon, Economist
DNR Office of Budget and Economics



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In the final analysis, the views expressed are our own and may not necessarily represent the views of the contributors or reviewers.

David Chertudi, Lead Economist
Craig Calhoon, Economist
DNR Office of Budget and Economics

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Acronyms and abbreviations

bbf	Billion board feet
BLS	U.S. Bureau of Labor Statistics
CAD	Canadian dollar
CNY	Chinese yuan (renminbi)
CPI	Consumer Price Index
CY	Calendar Year
DNR	Washington Department of Natural Resources
ECB	European Central Bank
ERFC	Washington State Economic and Revenue Forecast Council
FDA	Forest Development Account
Fed	U.S. Federal Reserve Board
FOMC	Federal Open Market Committee
FY	Fiscal Year
GDP	Gross Domestic Product
HMI	National Association of Home Builders/Wells Fargo Housing Market Index
IMF	International Monetary Fund
ISM	Institute for Supply Management
LVL	Laminated Veneer Lumber
mbf	Thousand board feet
mmbf	Million board feet
NAFTA	North American Free Trade Agreement
OPEC	Organization of Petroleum Exporting Nations
PPI	Producer Price Index
Q1	First quarter of year (similarly, Q2, Q3, and Q4)
QE	Quantitative Easing
RCW	Revised Code of Washington
RISI	Resource Information Systems, Inc.
RMCA	Resource Management Cost Account
SA	Seasonally Adjusted
SAAR	Seasonally Adjusted Annual Rate
USD	U.S. Dollar
WDFW	Washington Department of Fish and Wildlife
WWPA	Western Wood Products Association
WTO	World Trade Organization



Preface

This *Economic and Revenue Forecast* projects revenues from Washington state lands managed by the Washington State Department of Natural Resources (DNR). These revenues are distributed to management funds and beneficiaries as directed by statute. The Forecast revenues are organized by source, fund, and fiscal year.

DNR revises its Forecast quarterly to provide updated information for trust beneficiaries and state and department budgeting purposes. See the Forecast calendar at the end of this section for release dates. We strive to produce the most accurate and objective forecast possible, based on current policy direction and available information. Actual revenues depend on DNR's future policy decisions and on changes in market conditions beyond our control.

This Forecast covers fiscal years 2013 through 2017. Fiscal years for Washington State government begin July 1 and end June 30. For example, Fiscal Year 2013 runs from July 1, 2012 through June 30, 2013.

The baseline date (the point that designates the transition from “actuals” to forecast) for this Forecast is October 1, 2012. The forecast numbers beyond that date are predicted from the most up-to-date DNR sales and revenue data available, including DNR's timber sales results through October 2012. Macroeconomic and market outlook data and trends are the most up to date available as the Forecast document is being written.

Unless otherwise indicated, values are expressed in nominal terms without adjustment for inflation or seasonality. Therefore, interpreting trends in the Forecast requires attention to inflationary changes in the value of money over time separate from changes attributable to other economic influences.

Each DNR Forecast builds on the previous one, emphasizing ongoing changes. Before preparing each Forecast, world and national macroeconomic conditions and the demand and supply for forest products and other commodities are re-evaluated. The impact on projected revenues from DNR-managed lands is then evaluated, given the current economic conditions and outlook.

DNR Forecasts provide information used in the *Washington Economic and Revenue Forecast* issued by the Washington State Economic and Revenue Forecast Council. The release dates for DNR Forecasts are determined by the state's Forecast schedule as prescribed by RCW 82.33.020. The table below shows the anticipated schedule for future *Economic and Revenue Forecasts*.

Economic Forecast Calendar

Forecast Title	Baseline Date	Draft Revenue Data Release Date	Final Data and Publication Date (approximate)
March 2013	February 1, 2013	March 8, 2013	March 29, 2013
June 2013	May 1, 2013	June 7, 2013	June 28, 2013
September 2013	August 1, 2013	September 9, 2013	September 30, 2013
November 2013	October 1, 2013	November 5, 2012	November 30, 2013



Introduction and Forecast Highlights

U.S. Economy and Housing Market. The U.S. economy continues its plodding and sluggish recovery from the Great Recession. The unemployment rate, which peaked at 10.0 percent in October 2009, is down to 7.9 percent as of October and there are now 4.5 million more nonfarm jobs than there were in early 2010. GDP growth remains modest at below two percent on an annual basis through the first three quarters of 2012. Manufacturing is now a weak link in the recovery but consumer confidence is perking up a bit. The housing market continues to show positive signs: new housing starts in September were at a seasonally adjusted annual rate of 872,000, their highest level in over four years, and average U.S. housing prices have increased in each of seven months through August. However, the U.S. economy faces significant challenges. There are still too many unemployed workers, the European financial crisis drags on and many European countries are moving into recession, China's economy is slowing, and Washington, D.C. is now turning its attention from the 2012 elections to addressing the "fiscal cliff" with its many potential impacts to the U.S. economy.

Log and Lumber Prices. Pacific Northwest log prices have been flat in 2012 to date. The price for a "typical" DNR log delivered to the mill averaged \$473/mbf over the first ten months of 2012, down from \$481/mbf for all of 2011. West Coast lumber prices have been moving up through the year and they are up from last year: the Random Lengths' Coast Dry Random and Stud composite lumber price averaged \$303/mbf for the first nine months of 2012, compared with \$270/mbf for all of 2011.

Timber Sales Volume. Projected timber sales volumes for FYs 2013-2017 are unchanged from the September Forecast. Timber sales volumes are forecast to be 560 mmbf for FY 2013 and 562 mmbf for FY 2014. Sales volumes for FYs 2015 through 2017 are predicted to be about 587 mmbf per year.

Timber Sales Prices. Predicted timber sales prices are also unchanged from the September Forecast. The FY 2013 average sales price is predicted to be about \$280/mbf; timber sales prices have averaged \$276/mbf in the first four months of FY 2013. Based on plans for the timber mix to be offered for sale and on increasing confidence in a genuine (albeit slow) recovery in the U.S. housing market, timber sales prices are projected to be about \$315/mbf in FY 2014, \$335/mbf in FY 2015, \$319/mbf in FY 2016, and \$308/mbf in FY 2017.

Timber Removal Volume and Prices. DNR timber purchasers indicate they will somewhat delay harvests on volume under contract compared with what they reported for the September Forecast; predicted timber removal volumes and prices have changed accordingly. Removal volumes for FYs 2013-2017 are forecast to be 490 (-48), 598 (+15), 617 (+15), 583 (+2), and

587 mmbf respectively. Projected timber removal prices are forecast to be \$285 (+\$2.0), \$290 (-\$0.9), \$310 (-\$0.7), \$325 (-\$0.1), and \$320/mbf for each of the fiscal years in the Forecast period.

Bottom Line for Timber Revenues. Due to the change in the timing of removals, forecast timber revenues have changed, with the greatest impact felt in FY 2013. The timber revenue projection for the 2011-2013 Biennium is revised downward four percent from \$320.1 million to \$307.4 million. For the 2013-2015 Biennium, the projected revenue from timber removals is revised upwards two percent from \$356.5 million to \$364.7 million. Revenues for the 2015-2017 Biennium are predicted to be \$377.3 million, up slightly from \$376.8 million.

Uplands and Aquatic Lands Lease (Non-Timber) Revenues. In addition to revenue from timber removals on state lands, DNR also receives sizable revenues from managing leases on uplands and aquatic lands. Compared to the previous Forecast, revenues from agricultural and other upland leases are unchanged at \$24.7 million in FY 2013, \$23.5 million in FY 2014, \$23.9 million in FY 2015, \$24.2 million in FY 2016, and \$24.5 million in FY 2017. There is no change in the predicted \$9.5 million in commercial lease revenues for FY 2013, or in any of the others years of the Forecast period, at \$9.7, \$9.9, \$9.9, and \$9.9 million respectively. Projected aquatic lands revenues in all years are increased by less than one percent to \$29.9 million in FY 2013, \$30.3 million in FY 2014, \$31.2 million in FY 2015, \$32.1 million in FY 2016, and \$33.0 million in FY 2017. These increases reflect a very modest upward revision to expected geoduck auction prices in the coming years.

Total Revenues. Total 2011-2013 Biennium revenues are projected to be \$448.0 million, down \$12.5 million (three percent) from the September Forecast. For the 2013-2015 Biennium total revenues are projected to be \$493.1 million, up \$8.6 million (two percent) from the previous projection. Revenues for the 2016-2017 Biennium are expected to total \$510.9 million, up \$0.9 million from the September estimate.

Risks to the Forecast. The largest risk to the Forecast is falling short of projected timber sales volumes due to potential environmental and policy issues (e.g., riparian management areas, and continued timber harvest deferrals pending implementation of a long-term marbled murrelet conservation strategy). Also on the downside are the many challenges to U.S. economic recovery cited in the opening paragraph above. On the upside, there is a chance that the recovery in the U.S. housing market will be quicker and stronger than anticipated.



Part 1. Macroeconomic Conditions

This section briefly reviews current and predicted conditions in the United States and world economies, because they affect the bid prices for DNR timber sales as well as lease revenues from DNR-managed uplands and aquatic lands.

International supply and demand also affect domestic timber stumpage and lumber prices. On the supply side, for example, Canada has a strong influence on the U.S. wood products sectors because it is a major source of lumber entering U.S. markets. On the demand side, China is an important market for commodities including logs and geoducks.

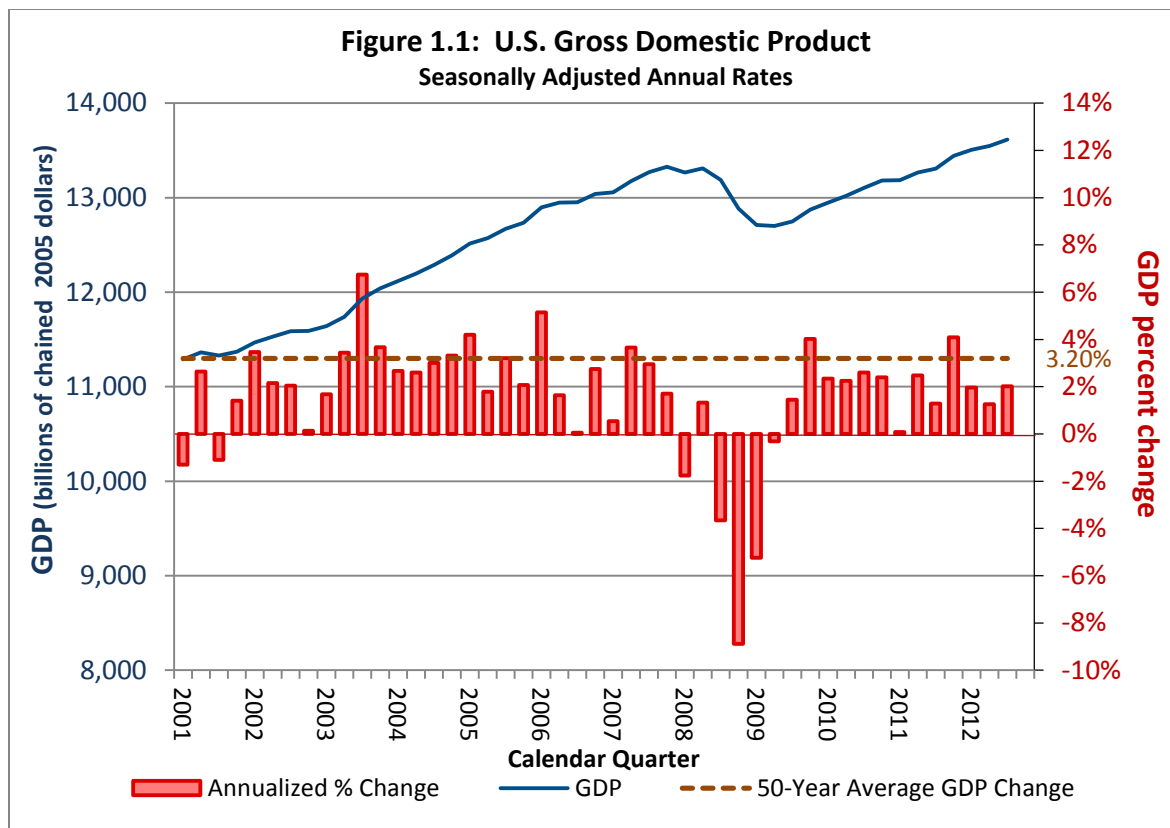
Unless otherwise noted, all years in this section are calendar years.

U.S. economy

Gross Domestic Product (GDP). GDP is the total output of goods and services produced by labor and property located in the United States, minus inflation. **Figure 1.1** clearly shows the extreme shock of the Great Recession during 2008 and the first half of 2009, when GDP actually declined in five out of six quarters. It took almost four years—until Q4 2011—for real GDP to return to its pre-recession peak (Q4 2007). Since turning positive again in mid-2009, GDP growth has averaged a rather weak 2.2 percent on a real annual basis, compared with an annualized average of 3.2 percent over the last 50 years.

GDP growth has tapered off to 1.7 percent over the first three quarters of 2012, including the preliminary GDP growth number for Q3 2012 of 2.0 percent. The primary contributors to the nation's third quarter growth were personal consumption expenditures (PCE), federal government spending, and residential fixed investment. Personal consumption expenditures increased at a 2.0 percent annual rate, federal government consumption expenditures at 9.6 percent, and residential investment at 14.4 percent.

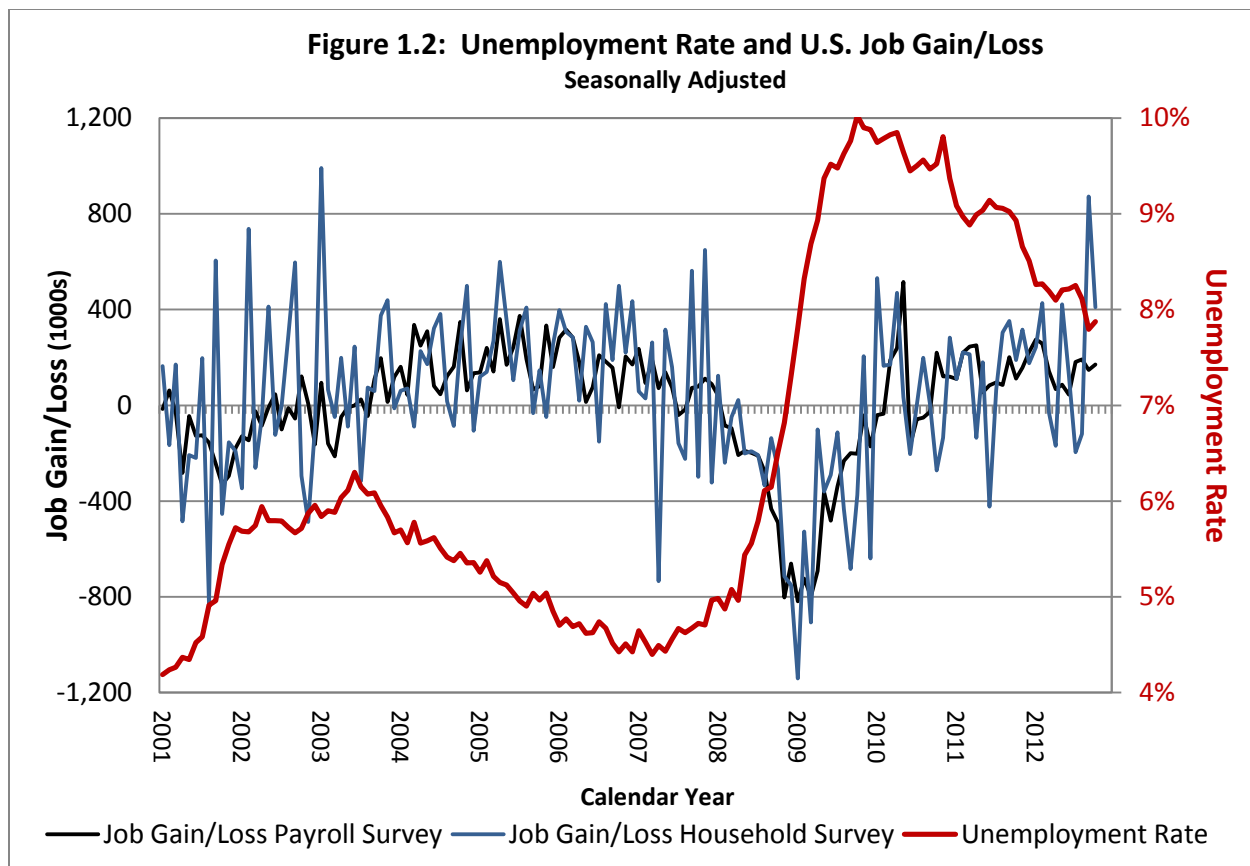
The three-year-long drag on GDP from declining state and local government expenditures may be ending. While still negative in Q3, the impact on GDP is smaller than it has been. In real terms, state and local government spending has declined to 2001 levels, despite a larger population.



The latest Blue Chip Consensus GDP projections are unchanged at 2.2 percent for 2012 and are revised downward from 2.1 to 2.0 percent for 2013.

Employment. The U.S. unemployment rate continues to fall. As shown by the red line in **Figure 1.2**, the national unemployment rate, which went as high as 10.0 percent in October 2009, is now at 7.9 percent as of October, after having dropped to 7.8 percent in September. The unemployment rate is now at its lowest level since January 2009.

There are two major official U.S. employment data series—the household survey and the payroll survey—both maintained by the U.S. Bureau of Labor Statistics. The household survey (or current population survey) is a sample survey of households and it includes self-employed persons and farm workers. The unemployment and labor force participation statistics are derived from the household survey. The payroll survey (or establishment survey) samples firms and does not include self-employed persons or farm workers. Employment statistics by industry sector are derived from the payroll survey. **Figure 1.2** shows changes in the number of employed persons, or jobs gained or lost, according to each. Many economists favor the payroll survey data as a measure of job growth, or changes in employment level, in part because the month to month changes are much less volatile in the payroll survey (see **Figure 1.2**) and in part because of issues that arise when comparing older years' data with more recent data, which have incorporated results of the 2010 Census.



According to the payroll survey, there were 2.0 million more jobs in the United States than there were a year earlier while there were 3.1 million more according to the household survey.

The alternative unemployment rate, U-6, measures unemployment, involuntarily part-time employment, and marginally attached workers, and so provides a more complete picture than October's 7.9 percent headline rate. The U-6 rate was 14.6 percent in October, down from 16.0 percent a year earlier. However, the U-6 rate has been stuck in the 14.5 to 15.0 percent range for the last nine months and remains significantly higher than the 2006-2007 average of 8.3 percent.

The Great Recession also expanded the ranks of the long-term unemployed to an extent not seen since the Great Depression. In October, 5.0 million people were unemployed for over six months. This is an improvement over the peak of 6.7 million in spring 2010 but it is still far above the 1.3 million average for 2005-2007. Also in October, the average duration of unemployment was 40.2 weeks—still near the record high of 40.9 weeks in November 2011. This contrasts with the 17.4-week average for 2005-2007.

Consumption. Real personal consumption expenditures in Q3 2012 were 2.0 percent higher than a year ago. Consumer spending on durable goods was up 8.3 percent year-over-year, likely reflecting purchases of automobiles and major appliances that were deferred during the depth of the recession. Over the year period, spending on nondurable goods increased by 1.6 percent and spending on services was up by only 1.1 percent.

U.S. consumer confidence was deeply shaken in the Great Recession, but it is starting to perk up a bit. The Thomson Reuters/University of Michigan Index of Consumer Sentiment rose to 82.6 in October 2012, up 36 percent from a year ago. In the most recent survey, consumers were more optimistic about prospects for their own personal finances, they anticipated continued improvement in the national economy, and they expected the unemployment rate to decline significantly during the year ahead. Overall, consumers were more confident about economic prospects in October than any other time during the past five years.

The very positive economic expectations of consumers stand in sharp contrast to growing concerns expressed by investors and companies about the impending fiscal cliff as well as the impact of a slowing global economy. While the surge in confidence will act to bolster consumer spending during the upcoming holiday season, it also means that this higher level of optimism is more vulnerable to reversal depending on how and when the fiscal cliff is bridged.

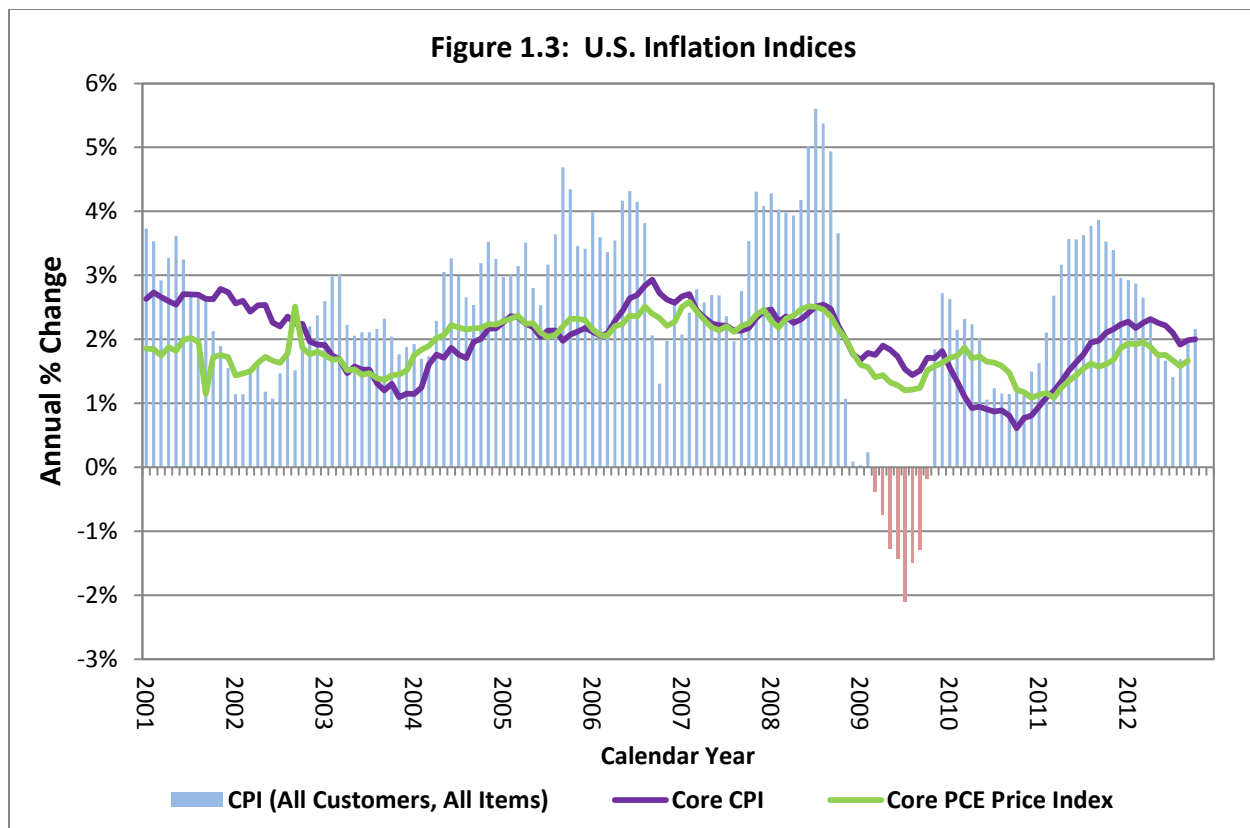
*Richard Curtin, Chief Economist
Thomson Reuters/University of Michigan Surveys of Consumers
October 26, 2012*

Interest Rates. U.S. interest rates remain at or near record lows. The Federal Reserve funds rate has remained in the 0.0-0.25 percent range since December 2008 and the FOMC has pledged to keep rates near zero through mid-2015. Ten-year U.S. Treasury bonds were at 1.61 percent on November 19.

Average rates on closed conventional 30-year fixed rate mortgages were at a new historic low of 3.68 percent in September and have been mostly declining since the middle of 2008 (see **Figure 2.2**).

Inflation. **Figure 1.3** shows several measures of the U.S. inflation rate. The bars—representing “headline” inflation, measured by year-over-year changes in the Consumer Price Index (CPI)—show that consumer prices in the United States fell precipitously beginning in August 2008. The CPI did not recover to its July 2008 level until December 2010. In effect, inflation was zero over that two and one-half year period. The rate of inflation was 1.5 percent for all of 2010 and 3.0 percent for 2011. More recently, the year-over-year change in CPI was 2.0 percent in September and 2.2 percent in October. Many economic and political observers have been predicting that runaway inflation will result from the Fed’s quantitative easing measures, but such inflation has failed to materialize and does not appear to be on the horizon. Most economic forecasters see annual inflation of 2.0 percent or below through 2016.

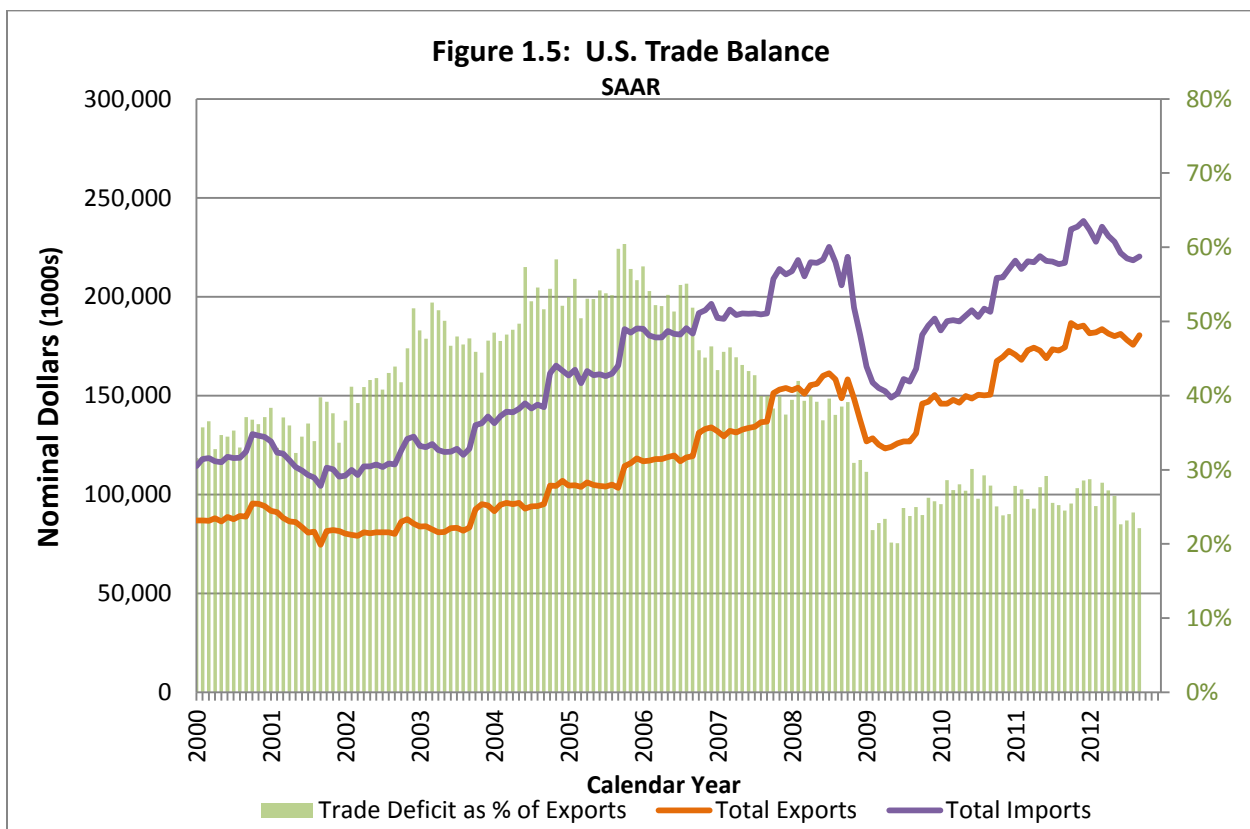
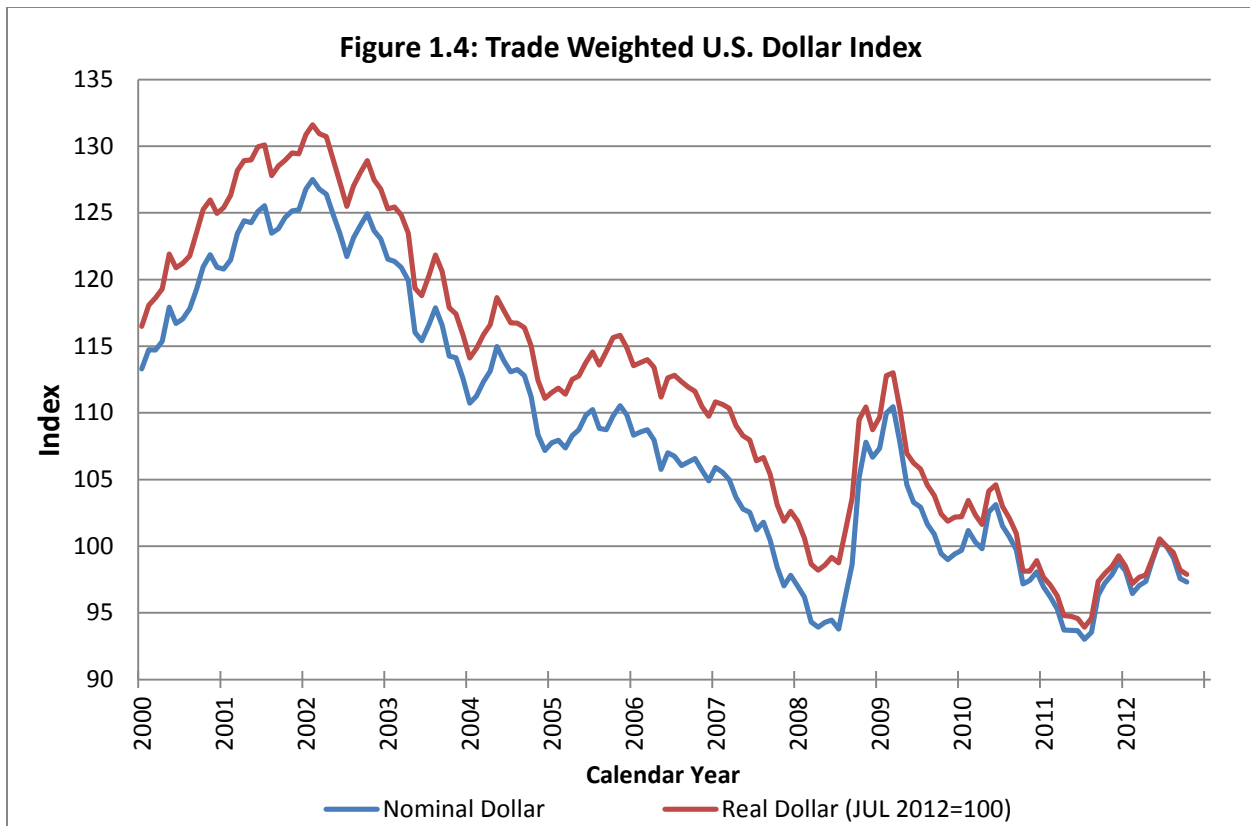
Figure 1.3 also shows two alternative measures of inflation—core CPI and the core personal consumption expenditures (PCE) price index—that exclude purchases of historically volatile goods such as energy and food and provide a more realistic measure of underlying long-term inflation. The PCE price index is preferred by the Federal Reserve; it shows that long-term inflation has been below 2 percent since November 2008.



The U.S. Dollar and Foreign Trade. Figure 1.4 shows the broad trade-weighted U.S. dollar index for the last 12 years. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. In July 2011, the index in nominal and real terms fell to its lowest point in the history of the data series, which began in January 1973. At its low, the (real) U.S. dollar index was 29 percent below its early 2002 highpoint. Since July 2011, the dollar has generally strengthened off the bottom.

Declines in the dollar's trade value make American goods cheaper and more competitive relative to foreign goods. This supports U.S. exports and boosts economic growth. However, it also leads to higher prices for imports which is part of the reason why oil and gasoline prices increased in dollar terms from 2009 through much of 2011 (see **Figure 1.7**).

For the first three quarters of 2012, the total U.S. trade deficit was \$412 billion—the difference between \$1.62 trillion in exports and \$2.04 trillion in imports. The United States actually had a \$139 billion surplus on trade in services for 2012 through September but this was outweighed by the much larger \$554 billion deficit on trade in goods. As shown in **Figure 1.5**, the U.S. trade deficit as a percent of exports dropped to a cyclical low of 20 percent in May and June of 2009 (compared with a high of 60 percent in September and October of 2005) because imports fell off much more steeply than exports. More recently, the deficit as a percentage of exports has remained flat, at 26.8, 26.6, and 25.3 percent respectively for 2010, 2011, and the first three quarters of 2012.



In September 2012 the deficit as a percentage of exports was at 22.1 percent, the lowest level since the May-June 2009 trough. The trade item which makes far and away the largest contribution to the trade deficit is petroleum products, so it is of interest that U.S. exports of petroleum products were the highest on record in September. Other export categories that were the highest on record in September were goods, capital goods, and foods, feeds, and beverages. U.S. imports of consumer goods were also the highest on record.

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World economy

The U.S. economy does not exist in isolation and the world is becoming more economically interconnected. World events and the performance of other countries' economies impact, for better and for worse, the U.S. economy.

Europe. Most forecasts for the U.S. economy cite the ongoing European financial crisis as the most significant downside risk. Weakness in Eurozone economies means reduced demand for U.S. exports as well as continued difficulties in addressing their sovereign debt and banking crises. Interestingly, the November Forecast by the Washington Economic and Revenue Forecast Council (ERFC) names the European situation as both a downside risk and an upside risk. On the downside are the concerns that the European sovereign debt crisis will take a turn for the worse, with Greece exiting the Eurozone, and that a European banking crisis will affect U.S. banks. On the upside are the possibilities that debt restructuring in the weaker Eurozone economies will be successful, that the rest of the Eurozone will provide sufficient support to stabilize financial markets and prevent any contagion, and that European governments are able to build a firewall around their banks so that the sovereign debt crisis does not turn into a more intractable banking crisis.

The European financial crisis took a back seat in the news during the U.S. election season and after the European Central Bank's decision to serve as a lender of last resort, which calmed nerves and made an imminent breakup (e.g., a Greek exit) less likely. Disintegration may have been delayed, but the crisis seems to have no end in sight as economic conditions in Europe continue to slowly deteriorate. Greece's unemployment rate in August rose again, to 25.4 percent, the highest since the Greek statistical agency began publishing monthly data in 2004. The jobless rate for women was 29 percent, and it was 58 percent for Greeks 15 to 24 years old. Unemployment in Spain is expected to reach 27 percent next year.¹

In the third quarter of 2012, the 17-member bloc comprising the eurozone fell back into recession (defined as two consecutive quarters of contraction) for the first time in three years as the deepening financial crisis in peripheral nations dragged down the core northern economies. Gross domestic product in the euro area shrank 0.1 percent in June through September, compared with the previous three months when it fell 0.2 percent. The latest EU data indicates that the debt crisis in the periphery is spilling over into Europe's strongest economies, as Austria and the Netherlands contracted sharply along with Greece, Italy, Spain, and Portugal. Recent data from Germany, Europe's growth engine, has also been largely disappointing, with business sentiment worsening, the private sector contracting, joblessness rising, and industrial orders falling at their sharpest rate in a year. While Germany's economy expanded by 4.2 percent in 2010 and by 3.0 percent in 2011, growth over the first three quarters of 2012 has slowed to 0.3 percent.²

There are renewed questions about whether austerity is worsening or helping to repair the European economic situation. New budget cuts enacted in Greece and Spain are widely

¹ Adapted from "Europe Back in the Spotlight", Tim Duy's Fed Watch blog, November 8, 2012.

² Adapted from "Eurozone slides back into recession", by James Fontanella-Khan, *Financial Times*, November 15, 2012.

unpopular and led to protests and violence on the streets. The IMF in its October 2012 World Economic Outlook has reversed itself and now finds that austerity measures in an economic downturn are ill-timed and that excessively rapid reductions in sovereign debt risk reduce economic growth and push advanced economies into deflationary spirals.

China. As the U.S. presidential election was taking place, Xi Jinping replaced Hu Jintao as leader of China's ruling Communist Party, as anticipated. Hu's rule ended after ten years (2002-2012) with an enviable economic record that astonishingly bested that of his predecessors. China's GDP growth averaged 9.5 percent per year under Deng Xiaoping (1978-1989) and 9.6 percent per year under Jiang Zemin (1989-2002). Hu had promised a "more balanced" path of development in pursuit of a more "harmonious" society. Instead, GDP growth was even faster under Hu, at 10.7%, even though it has slowed to less than eight percent this year, and his efforts to expand the role of household consumption to achieve more balanced growth was not successful. The household share of GDP averaged a strikingly low 37 percent from 2003 to 2011, compared with 46 percent under Jiang. Consumption has lagged partly because China's capital-intensive, monopolistic state-owned enterprises have taken large profits rather than driving down prices or bidding up wages. China's development has traditionally favored the city over the countryside and the coast over inland regions. When Hu assumed office, the share of China's economic output located in the coastal provinces had increased to 61 percent. Heavy investment in inland provinces has helped to check that trend and the coast's share of GDP was reduced to 58.5 percent last year. By 2008 rural incomes averaged less than 30 percent of urban disposable incomes, though urban incomes also outpaced rural incomes under Xiaoping and Ziang's regimes.³

Despite a decade of breakneck economic growth in China, discontent is widespread among the less well-off as well as among members of a much-expanded middle class, who want more say in how they are governed. In his departing state-of-the-union address on November 8, Hu repeated what has become a refrain of China's leaders: that its development is "unbalanced, uncoordinated, and unsustainable". He repeated calls for major changes in the country's growth model away from reliance on investment and exports and towards greater emphasis on consumption.⁴

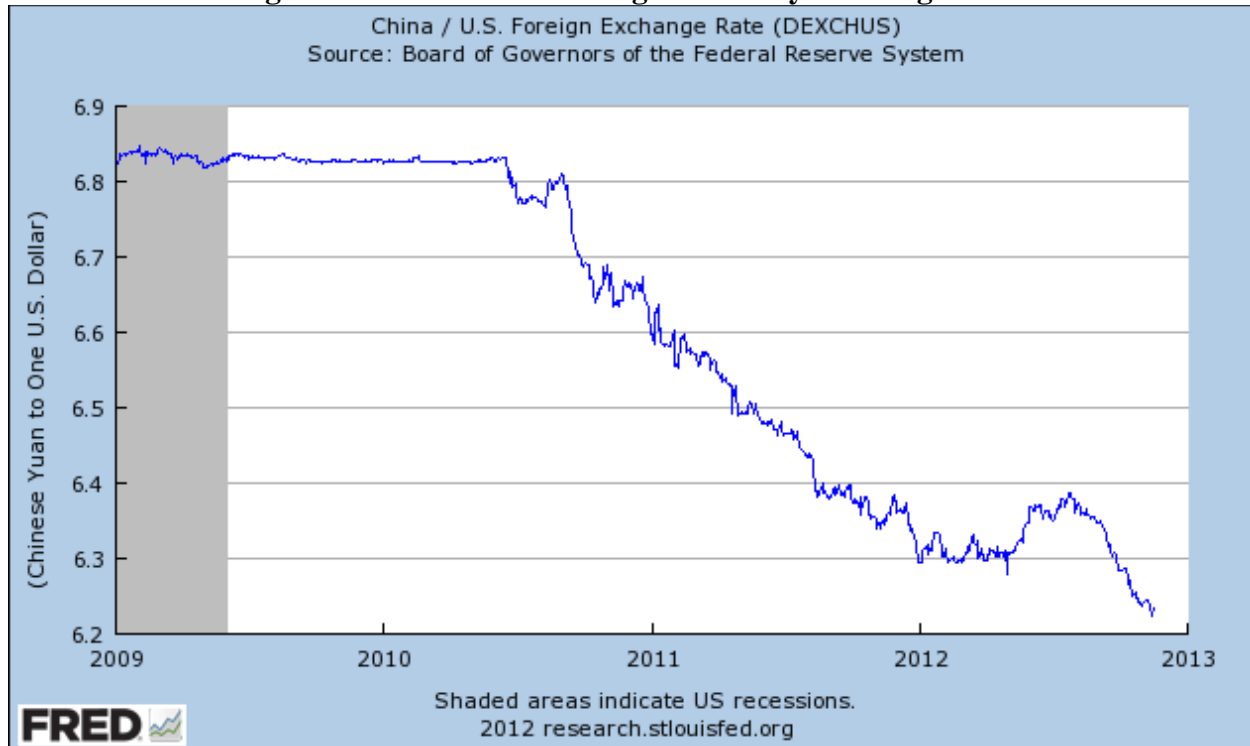
Many analysts have predicted that a Chinese economic slowdown is inevitable because the country is approaching the per capita income at which growth in other countries began to decelerate. However, a new study by the Federal Reserve Bank of San Francisco ("Is China Due for a Slowdown?", by Israel Malkin and Mark M. Spiegel, October 15, 2012) finds that China may escape such a slowdown because of its uneven geographical development. Their analysis, based on episodes of rapid expansion in four other Asian countries, suggests that growth in China's more developed provinces may slow to 5.5% by the close of the decade while growth in the country's less-developed provinces is expected to run at a robust 7.5% pace.

³ Adapted from "The paramount leader: The records of three leaders compared", The Economist, November 17, 2012.

⁴ Adapted from "Treading water: President Hu Jintao gives his last state-of-the-nation address as China's leader, admitting the growing contradictions in Chinese society", The Economist, November 10, 2012.

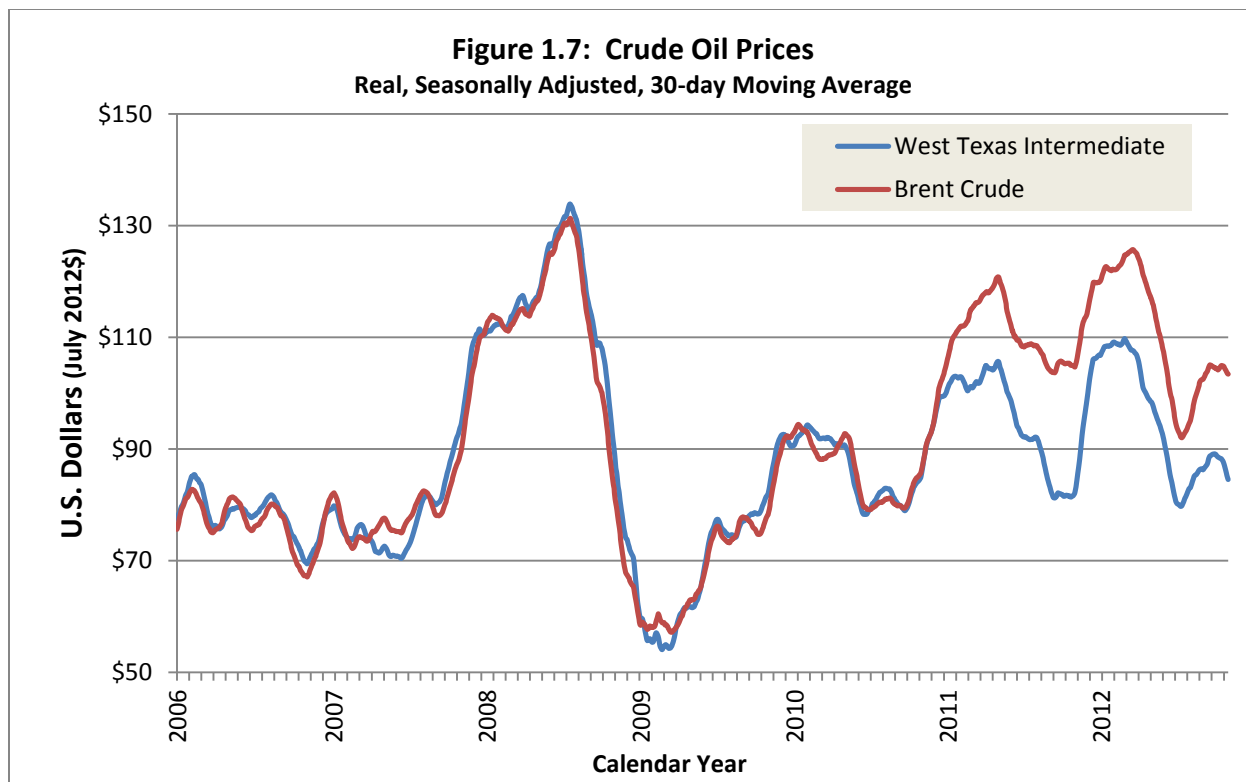
Casting China as a currency manipulator, among other things, was a popular slogan in the recent U.S. election campaigns. The accusation is that China is keeping the yuan's value artificially low relative to the U.S. dollar in order to make importing Chinese goods to the U.S. more attractive. In fact, the yuan has been strengthening against the dollar since mid-2010 when the Chinese government allowed it to begin fluctuating again (see **Figure 1.6**). The yuan is currently worth nine percent more relative to the dollar than it was in July 2010. Critics might respond that the yuan is still too weak and that the Chinese authorities need to allow it to strengthen even more quickly.

Figure 1.6: China/U.S. Foreign Currency Exchange Rate



Petroleum. Crude oil prices and supply play an important role in the world and U.S. domestic economies, since crude oil and its derivatives affect production, transportation, and consumption. In addition, oil prices—especially fluctuations—have the ability to influence intangible “forces” such as consumer and producer confidence. **Figure 1.7**, which presents six years of oil prices by the two most important indicators, the Brent Crude and West Texas Intermediate⁵, shows that this year featured the most dramatic crude oil price drop since 2008. These data have been adjusted for seasonality, so there is nothing seasonal about this trend. The lower petroleum

⁵As shown in **Figure 1.7**, the Brent Crude and West Texas Intermediate prices were essentially the same until late 2010 when the West Texas Intermediate price started tracking below the Brent Crude price. The difference in price has developed because unusually large stockpiles of crude oil have built up in the middle of the North American oil supply system and there is a higher price to move this landlocked surplus to market. The Brent Crude price remains more important to the overall U.S. economy as it is the predominant crude oil price benchmark in the world economy.



prices this year have been one of the few points of optimism in the world economy, but prices have risen since their low in July.



Part 2. Log and Lumber Industry Factors

This chapter focuses on specific market factors that affect timber stumpage prices and overall timber sales revenues received by the Washington State Department of Natural Resources (DNR). Timber stumpage prices reflect demand for lumber and other wood products, timber supply, and regional and local lumber mill capacity. The demand for lumber and structural wood products is directly related to the demand for U.S. housing and other end-use markets.

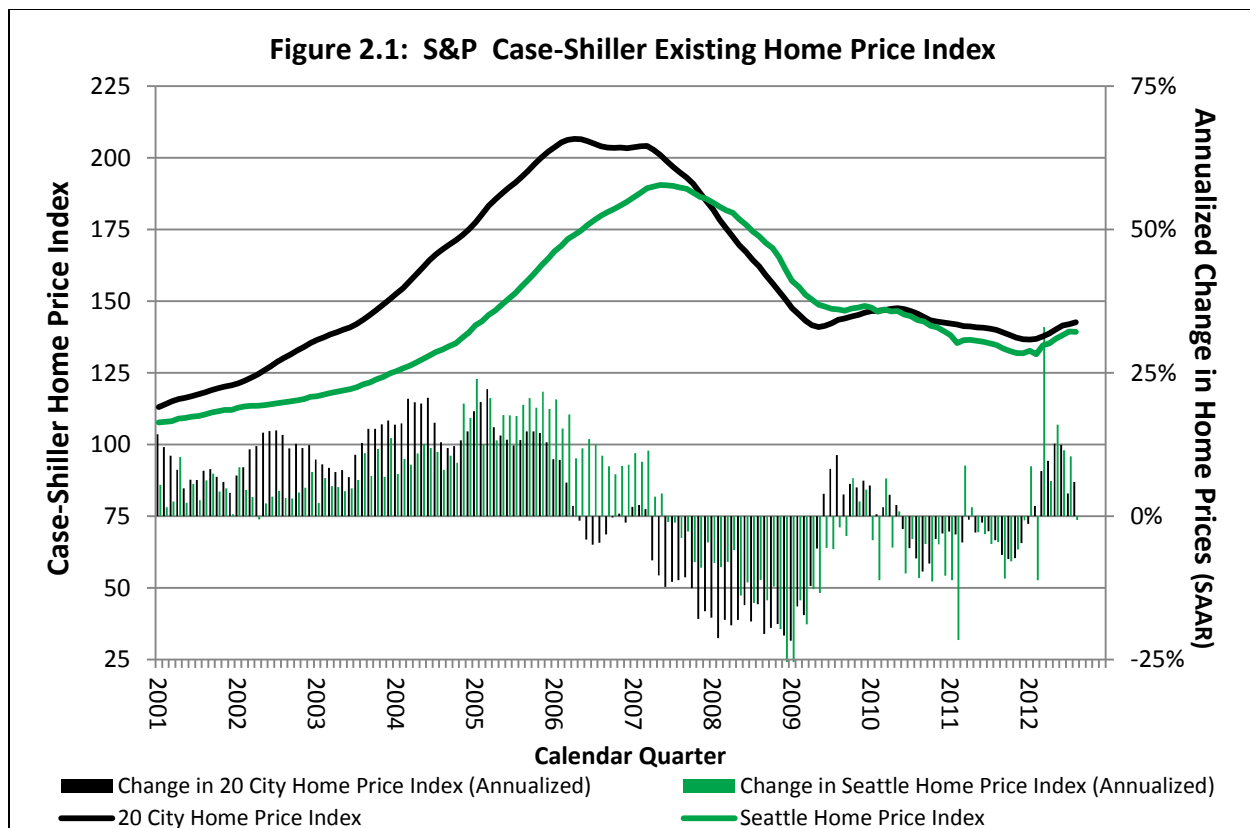
U.S. housing market

Housing Prices. An upward trend in U.S. housing prices is developing after six unprecedented years of falling and flat prices. The S&P/Case-Shiller Home Price Indices track changes in the value of residential real estate both nationally as well as in 20 metropolitan regions. The most recent release includes data through August 2012, and shows prices for existing home sales up for the fifth consecutive month for almost all 20 cities individually and for the 10-city and 20-city composites.

Figure 2.1 charts the seasonally adjusted Case-Shiller indices for the 20-city composite, which represents existing national home price trends, as well as the Seattle index. The national home price index has moved up each month in 2012 after bottoming out in January at its lowest point since January 2003, nine years earlier. In August the average existing house in the U.S. was worth 69 percent of its value at the peak of the real estate bubble in April 2006, up modestly from 66 percent in January.

Seattle house prices are similarly up in 2012, led by a striking 31 percent jump in March. When Seattle prices bottomed in February 2012—at their lowest point since June 2004—the average existing house in Seattle was worth only 69 percent of the May 2007 peak. As of August, the average Seattle home was worth 74 percent of the peak price, despite a slight drop from July.

At any point in time, these prices depend on consumer demand for houses and on the number and cost of houses available for sale. Over the past several years, excessive supply conspired with lower demand to lower housing prices. That prices are now rising suggests that these factors (and so the housing market in general) are improving, which is confirmed in the discussion of supply below. However, rising prices are not unambiguously good; all else being equal, rising prices make housing less affordable.

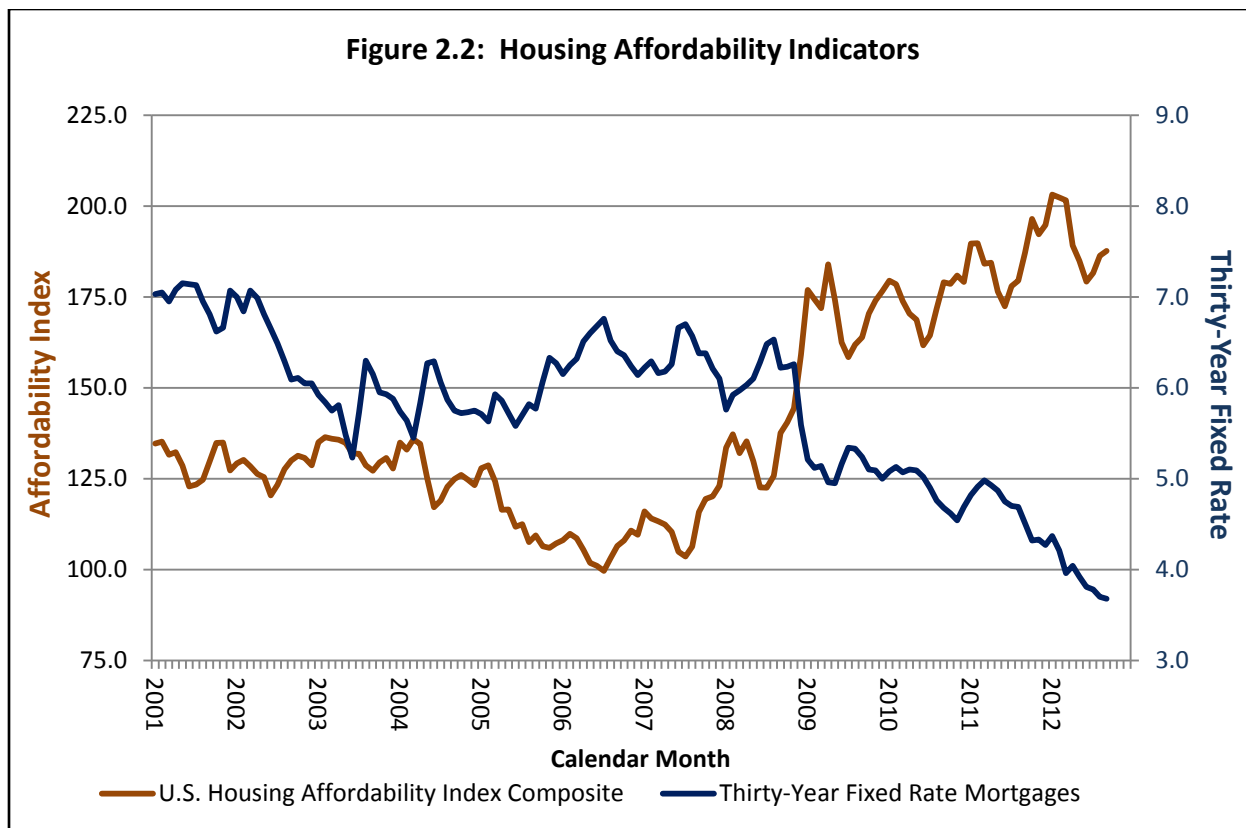


“Certainly, some tightening of credit standards was an appropriate response to the lax lending conditions that prevailed in the years leading up to the peak in house prices. However, it seems likely at this point that the pendulum has swung too far the other way, and that overly tight lending standards may now be preventing creditworthy borrowers from buying homes, thereby slowing the revival in housing and impeding the economic recovery.”

*Ben Bernanke
Chairman, Federal Reserve
November 15, 2012*

Affordability. The National Association of Realtors’ (NAR) U.S. Housing Affordability Index composite—which is based on the relationship between the median home price, the median family income, and the average mortgage interest rate—rose to a record high of 203.2 in January 2012 (see **Figure 2.2**). A higher index reflects greater household purchasing power and therefore improved affordability of the typical home.

The affordability index this January broke the 200 mark for the first time since recordkeeping began in 1970. Since then, the index fell sharply to 179.2 in June, driven by a 23 percent increase in the median-priced existing single-family home (this may be due to the mix of homes sold having relatively more higher-priced homes, driving up the value of the median-priced home sold). As **Figure 2.2** shows, the affordability index improved moderately from June to September.



U.S. 30-year fixed mortgage loan rates⁶ remain at historically low levels (see **Figure 2.2**), dropping to yet another new low of 3.68 percent in August. The 30-year fixed mortgage rate has been below 5 percent for 27 consecutive months.

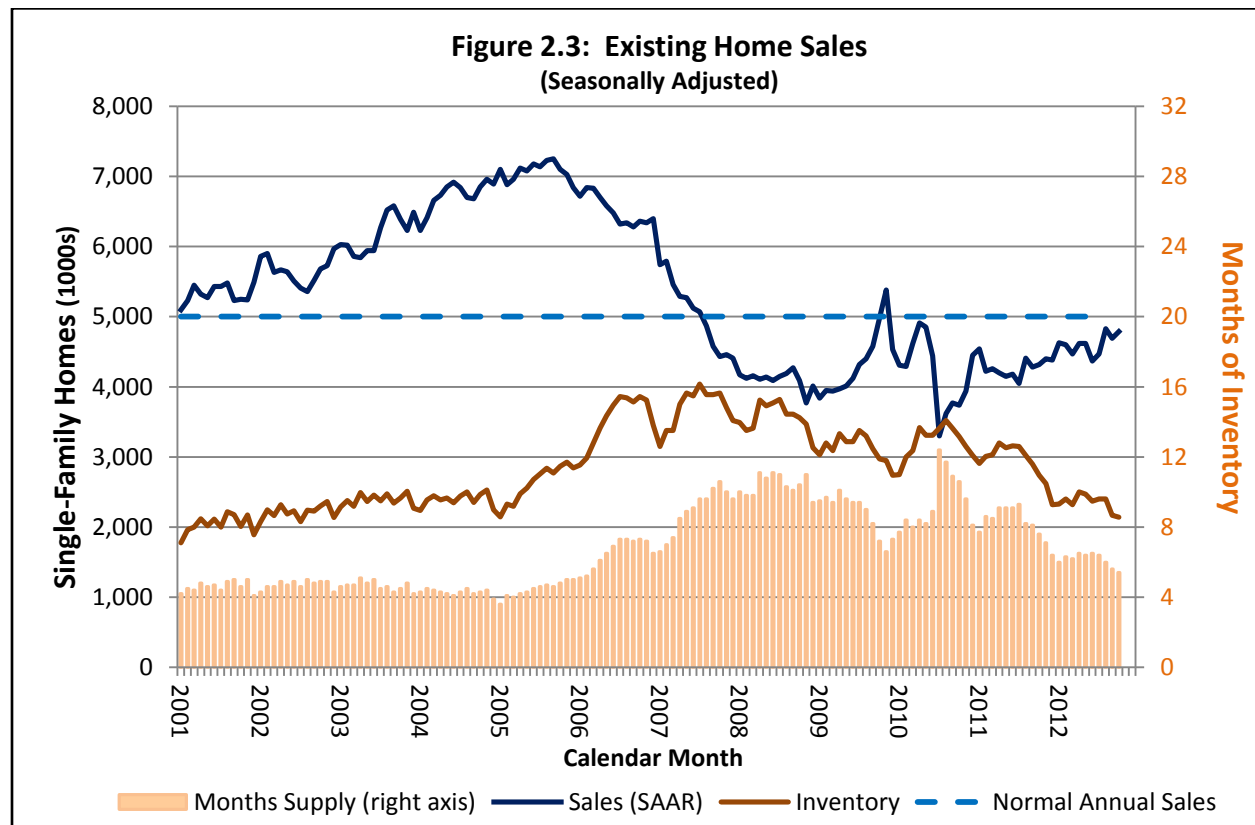
The family income required to qualify for a mortgage on the \$184,300 median-priced existing single family home in the United States at September's rate of 3.68 percent remains relatively low at only \$32,496 per year. This compares with an average qualifying income of \$45,984 in 2008 and \$52,992 in 2007. While the qualifying income is now much lower, median family income was \$61,080 in July, similar to the average of \$63,366 in 2008 and \$61,173 in 2007. Median wages have stagnated.

Some commentators question why very affordable housing has not had a larger impact on housing demand and home sales to date. The reason rests on a shortfall of demand and on stringent lending practices. A large number of potential home buyers remain on the sidelines because they have been injured financially by the Great Recession. Millions of homeowners remain underwater on their mortgages, while millions more have been unemployed for long periods and many of those fortunate to find jobs are now working for lower pay. Young adults, who normally are an important demand driver for home sales, are having an especially hard time in the job market and their large college loan obligations discourage first-time home buying. On top of these stunted demand dynamics, banks have tightened mortgage loan requirements (such

⁶ The data series cited here is the national average effective rate on closed fixed-rate 30-year conventional home mortgage loans by all major lenders as reported by the Federal Housing Finance Agency.

as requiring high down payments and excellent credit ratings), despite general willingness to lend.

Existing Home Sales. Existing home sales are clearly trending upwards and in September were moving at a seasonally adjusted annual rate of 4.8 million (see **Figure 2.3**); August and October sales were among the highest in five years.⁷ The data clearly show a general upward trend from the July 2010 bottom on existing home sales.



There are several assessments of what the new “normal” sales rate will be. Given demographic and demand conditions, Lawrence Yun, Chief Economist for the National Association of Realtors, suggests that a normal rate of existing home sales could be in the range of 5 to 5.5 million if all conditions were optimal. He thinks that existing home sales may average five million in all of 2013, but it will require less stringent lending standards and stronger job creation to rise above that level.

Based on historical turnover rates, Bill McBride of Calculated Risk estimates that normal sales will range from 4.5 to 5.0 million. He points out that although existing home sales are close to that range now, truly normal conditions would have very few distressed sales. He suggests that existing home sales will not return to the housing bubble’s 6 or 7 million per year, but instead that the key to returning to “normal” is more conventional sales and fewer distressed sales.

⁷ Indeed, August and October did have the highest existing home sales in five years, except for two peaks in 2009 and 2010 that were created by short-lived first-time home buyers incentive programs.

One sign of an improving housing market is that the inventory of existing homes for sale has dropped back to a level not seen for almost seven years (see **Figure 2.3**). For the first ten months of 2012 through October, the inventory has flattened off at a level averaging 2.35 million homes. This compares with a peak of 4.0 million existing homes in the inventory in July 2007.

Another encouraging trend is the sharp fall in months' worth of sales in the inventory of used homes on the market at current sales levels (see **Figure 2.3**), now down to a level averaging 6.1 months in the first ten months of 2012. This measure peaked at 12.4 months only two years ago in July 2010. In more normal times it is in the four to five month range.

New Home Sales. New home sales continue to be at historically low levels, but are starting to ease out of the multi-year trough. Last year (2011) was the lowest year on record with only 307,000 new homes sold, compared with the long-term (1963-2010) "normal" annual rate of 678,000 per year. **Figure 2.4** shows that new home sales bottomed out in mid-2010 and that they have been moving up since late 2011.

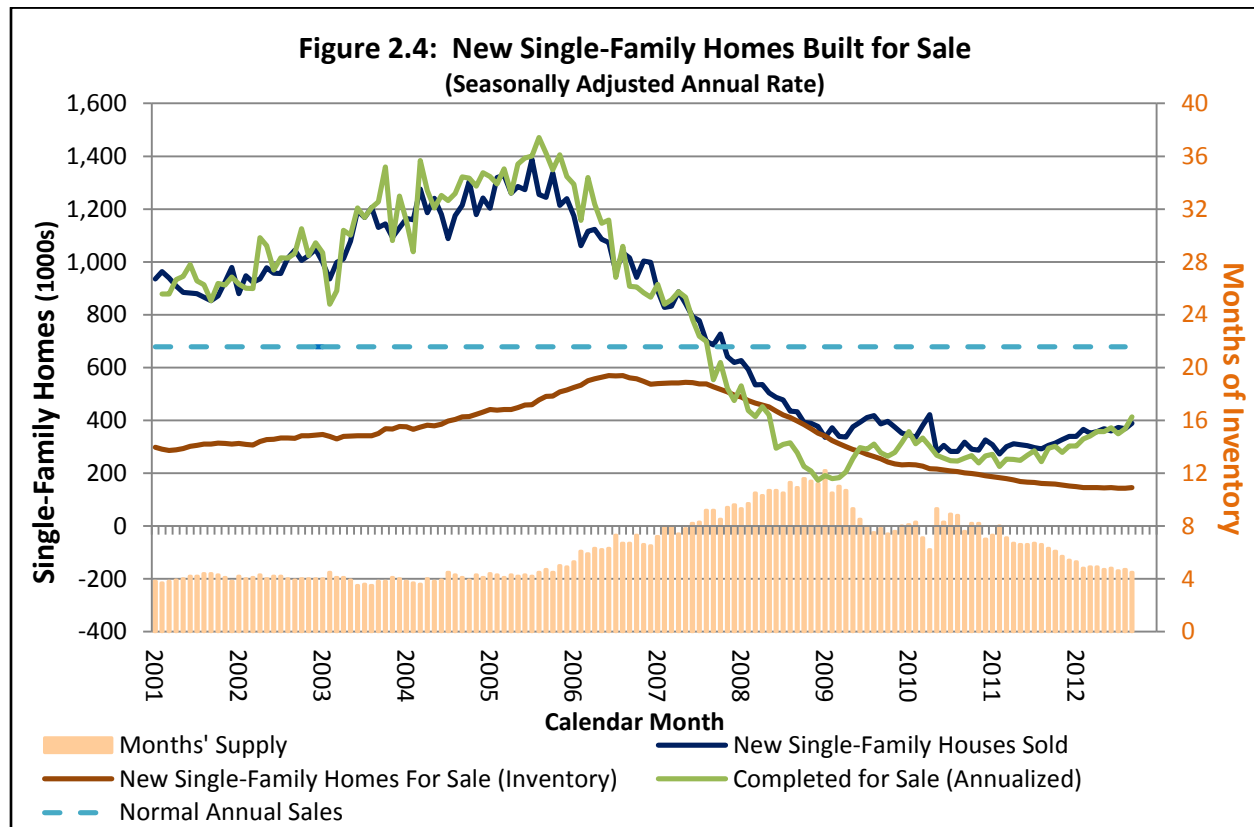


Figure 2.4 also shows that new home sales and new home construction move together. As low as new home sales (blue line on graph) have been, new house construction (green line) has been even lower since early 2007. Since the number of new homes sold has exceeded the number of new homes built for the last five years, the inventory of newly built homes for sale has declined over the same period. New home inventory is now down to its lowest level in six years. At a high in July 2006, there were 572,000 new single family homes available to purchase in the

United States. At the end of September 2012, there were only 145,000 available, just off the record low of 143,000 in July and August. The decline in the inventory of new homes is now slowing down and appears to be near its bottom: after five years, the number of completions has caught up with the number of new home sales.

One sign of a strengthening housing market is that the total months' worth of inventory of new homes for sale may be near its bottom. In September 2012, as shown in **Figure 2.4**, the months' worth of inventory of new homes for sale (at current sales rates) decreased to 4.5 months from a high of 12.2 months in January 2009. This measure is now approaching the pre-2006 average of about four months' worth of inventory of new homes. New home completions and sales will not increase significantly until the excess supply of existing homes, including those in the foreclosure pipeline, is more fully absorbed. Reducing the inventory (supply) of existing and new homes for sale is a necessary part of restoring the U.S. housing market because it increases the need for new house construction.

Housing Shadow Inventory. The inventories of existing and new homes discussed above are made up of those housing units that are currently listed for sale ("on the market"). While it exists even in normal times, the "shadow inventory"—housing units not currently on the market, but expected to be listed in the next few years—has gained attention as one of the most important measures of the health of the housing market.

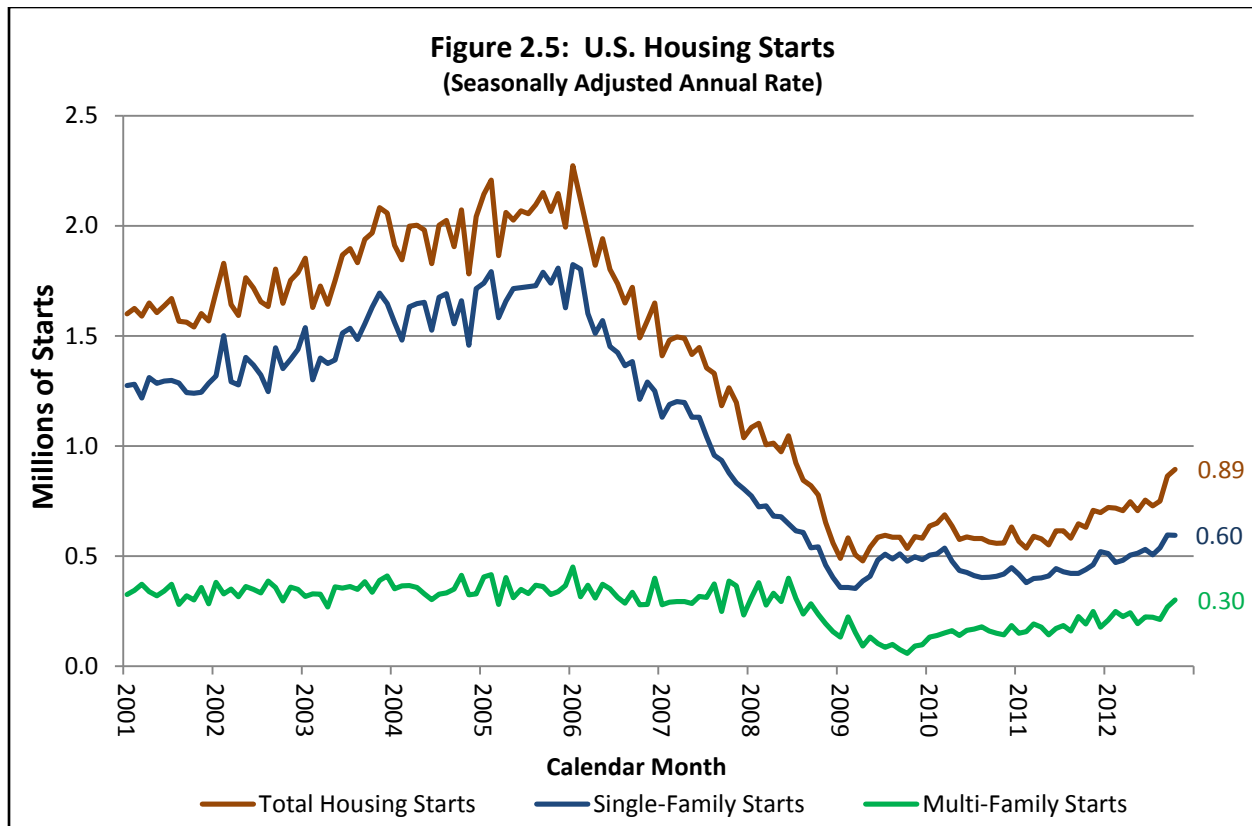
Definitions vary, but the shadow inventory may include:

- Bank-owned properties (REO, or "real estate owned")
- Properties in the process of foreclosure
- Properties with seriously delinquent mortgages of over 90+ days
- Properties with less seriously delinquent mortgages which will become seriously delinquent
- Condos that were converted to apartments and that are expected to be converted back in the next few years
- Investor owned rental properties
- Homes that owners want to sell but are waiting for a better market

CoreLogic tracks the shadow inventory, as defined by the first three groups listed above: it declined from its peak of 2.1 million housing units in January 2010 to 1.8 million units in April 2011 and further down to 1.5 million units in April 2012.

A large shadow inventory leads to a large number of distressed sales (including short sales), and therefore pushes home prices down. The decline in the excess shadow inventory relieves some of the downward pressure on house prices.

Housing Starts. Housing starts accelerated in the United States in 2012, after moving more or less sideways at a historic low level for the last three years (see **Figure 2.5**). In April 2009, they fell to 478,000 (seasonally adjusted annual rate), the all-time record low since the Census Bureau began tracking housing starts in 1959. In the last six months (May-October 2012), new housing starts have averaged 783,000 (SAAR), a level not seen since early 2008 (see brown line on **Figure 2.5**). October's 894,000 starts represent a 3.6 percent increase over September's revised



value of 863,000. The improvements of the last month have not been broad-based, however: increased starts in the West and Midwest census regions were partially offset by decreases in the Northeast and South.

In the 2009-2011 housing market trough, single family starts (blue line) averaged 440,000 (SAAR). The annualized rate of single family starts is up to 524,000 for the first ten months of 2012. These upward trends are apparent in **Figure 2.5**. Multifamily starts for 2012 through October (green line) are now averaging 234,000 on an annualized basis, compared with the average of 149,000 in the three-year 2009-2011 trough.

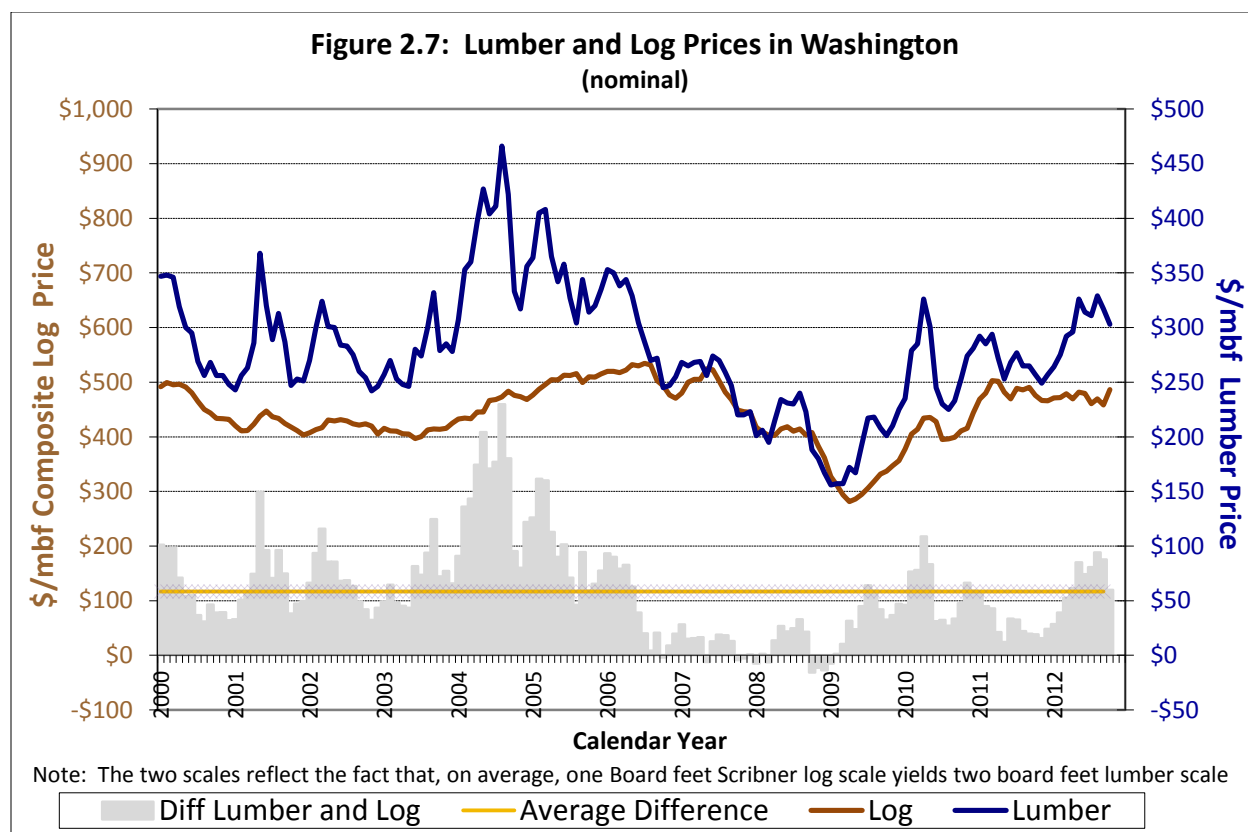
Home builder confidence in the market for newly built single-family homes, which like housing starts had been moving sideways at a depressed level for several years, continues to rise in 2012. In October, the National Association of Home Builders/Wells Fargo Housing Market Index (HMI) rose for a sixth consecutive month to 41, its highest reading since June 2006. The HMI averaged 15-16 for years 2008-2011. Any number under 50 indicates that more home builders view sales conditions as poor rather than good. Even though it is still under 50, its increase is another sign that the housing market is improving.

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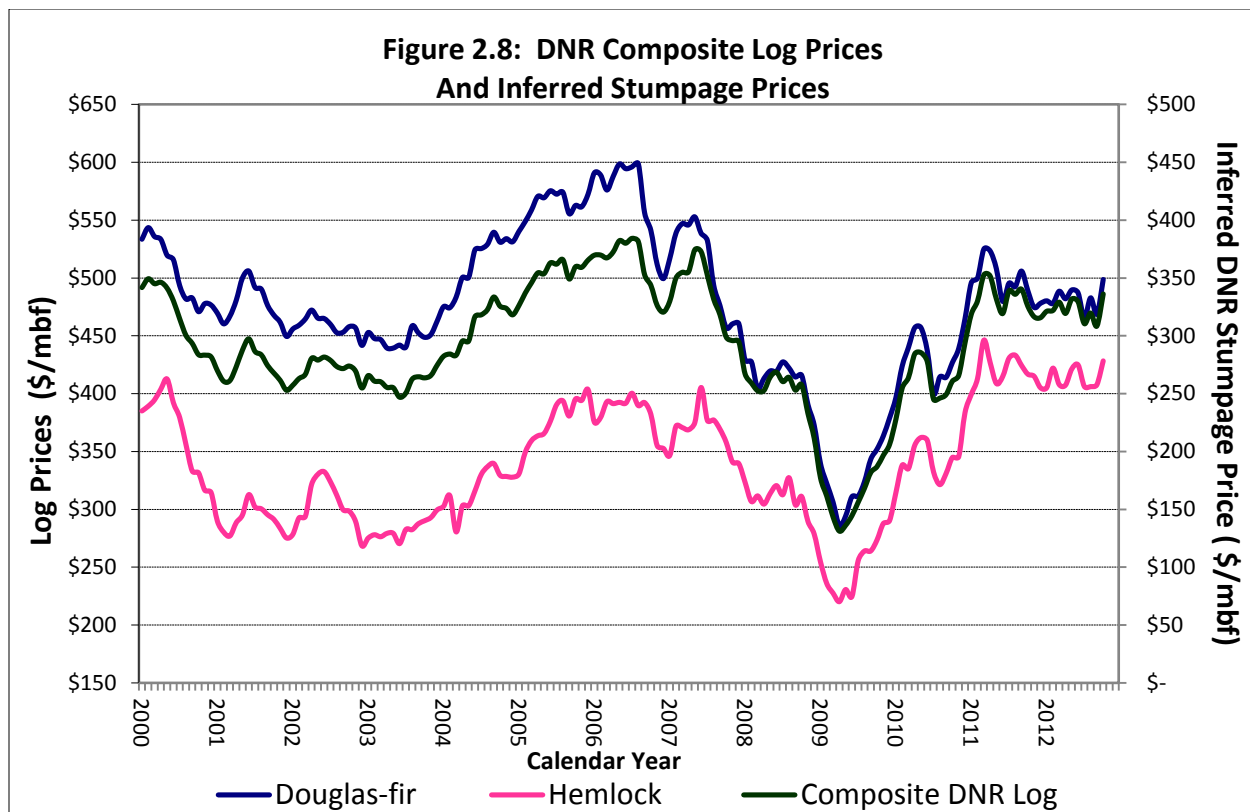
Lumber, log, and timber stumpage prices

Lumber and Log Prices. Figure 2.7 shows nominal monthly lumber and log prices in Washington since 2000.

Both lumber and log prices have significantly improved from their extreme lows of 2009. The lumber price bottomed at \$156/mbf in January 2009, in the depth of the Great Recession, and rose to hit a high of \$326/mbf in April 2010 before falling steeply to \$225/mbf in August of the same year. In the last two years, the regional lumber price has been generally rising and it was up to \$303/mbf in October 2012.



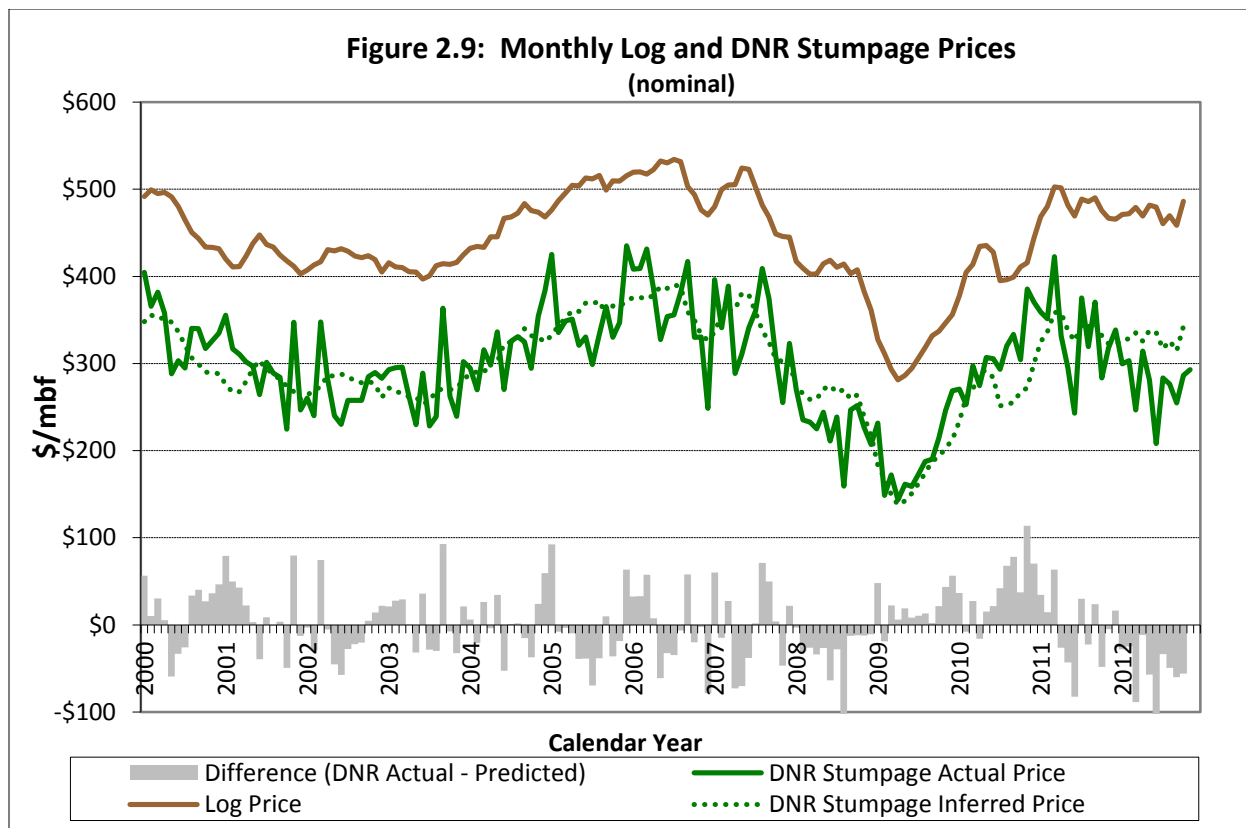
DNR's "composite log price" is calculated from prices for logs delivered to regional mills, weighted by the average geographic location, species, and grade composition of timber typically sold by DNR. In other words, it is the price a mill would pay for delivery of the typical log harvested from DNR-managed lands. These composite log prices are less volatile than lumber prices (see **Figure 2.7**). **Figure 2.8** presents log prices for Douglas-fir, hemlock, and DNR's composite logs. All three hit their post-2000 low in April 2009. The composite log price rose to \$503/mbf in March 2011 and has drifted down slightly since then, most recently to \$486/mbf in October 2012. Note the diverging trend between regional lumber and log prices since late 2011; it suggests that margins for lumber mills in the Pacific Northwest are increasing in 2012.



Log and Stumpage Prices. Stumpage prices are the prices that successful bidders pay to harvest timber from DNR-managed lands. **Figure 2.9** shows monthly nominal prices for logs (the same composite logs price line as in **Figures 2.7 and 2.8**) as well as actual DNR stumpage since 2000.

At any time, the difference between the delivered log price (in brown) and DNR’s stumpage price (in green), is equivalent to the sum of logging costs, hauling costs, and harvest profit. Taking the average of these costs over 12 years and subtracting it from the log price line gives us an inferred DNR stumpage price, as shown by the green dotted line. Stumpage prices from actual DNR timber sales in 2012 are generally lower than stumpage prices inferred from log prices, which may suggest that an upward market “correction” (or regression to the mean) is forthcoming.

The last DNR timber sales auction averaged \$287/mbf in October 2012, but prices had fallen as low as \$208/mbf in June 2012, weighed down by a large-volume thinning sale in the Olympic Experimental Forest and by four lower-valued sales in the northeastern part of the state. In 2012 through October, log prices at \$473/mbf are slightly down from \$481 for all of 2011. Stumpage prices (weighted by volume) for calendar 2012 through October have averaged \$275/mbf; these are down more sharply from the \$335/mbf average for the same period in 2011 (see **Figure 2.9**).



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Part 3. DNR's Revenue Forecast

This Revenue Forecast includes Department revenues from timber sales on trust uplands, leases on trust uplands, and leases on aquatic lands. It also forecasts revenues to individual funds, including DNR management funds, beneficiary current funds, and beneficiary permanent funds. Some caveats about the uncertainty of forecasting Department revenues are summarized near the end of this section.

Timber revenues

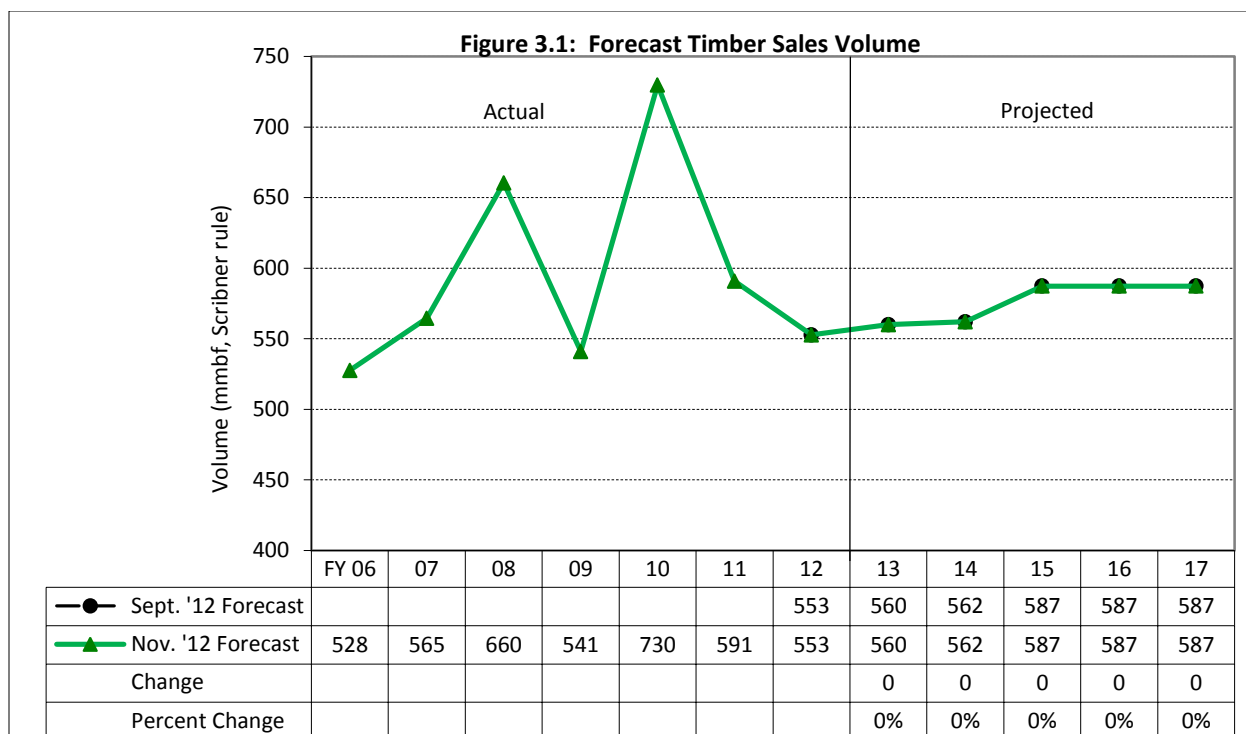
The Washington State Department of Natural Resources (DNR) sells timber through contracts. The Department determines the total volume to be offered for sale each month and the minimum bid for each timber sale. The sale is awarded to the highest bidder and the average sales price (\$/mbf), or stumpage price, is set by the result of the auction. DNR collects a 10 percent initial deposit at the time of sale and holds it until the sale is completed. Revenues are collected at the time of harvest (removal). The initial deposit is credited as the last 10 percent of timber is harvested.

Contracts for DNR timber sales sold in FY 2012 varied in duration from three months to three years, with an average (weighted by volume) of about 21.5 months. The purchaser determines the actual timing of harvest within the terms of the contract. As a result, timber revenues to beneficiaries and DNR management funds lag current market conditions: the lag is currently about 13 months.

Timber that is sold but not yet harvested is referred to as “volume under contract” or “inventory.” Timber volume is added to the inventory when it is sold and placed under contract, and it is removed from the inventory as the timber is harvested.

Timber Sales Volume. DNR sold 114 mmbf in FY 2013's first four months of timber sales. Projected timber sales volume for the current fiscal year is unchanged at 560 mmbf, and the FY 2014 forecast is unchanged at 562 mmbf (see **Figure 3.1**).

FY 2014 is the last year of the current FY 2005-2014 sustainable harvest decade. If actual timber sales results follow the projections in this Forecast, the shortfall on this decade's 5,500 mmbf target for western Washington will be about 295 mmbf (unchanged from the September Forecast). However, there is a risk of falling short of these projected timber sales volumes due to prospective environmental and policy issues. If realized, these risks would deepen the decadal shortfall.



FY 2015 is the first year of the next sustainable harvest decade (FY 2015 through FY 2024) for western Washington. Until the next decade's sustainable harvest levels are determined, the Forecast will use the Department's estimated annual Westside sustainable harvest level of 537 mmbf. Combined with projected eastern Washington timber sales of 50 mmbf for the next several years, we arrive at a projected annual timber sales volume of 587 mmbf for FYs 2015-2017.

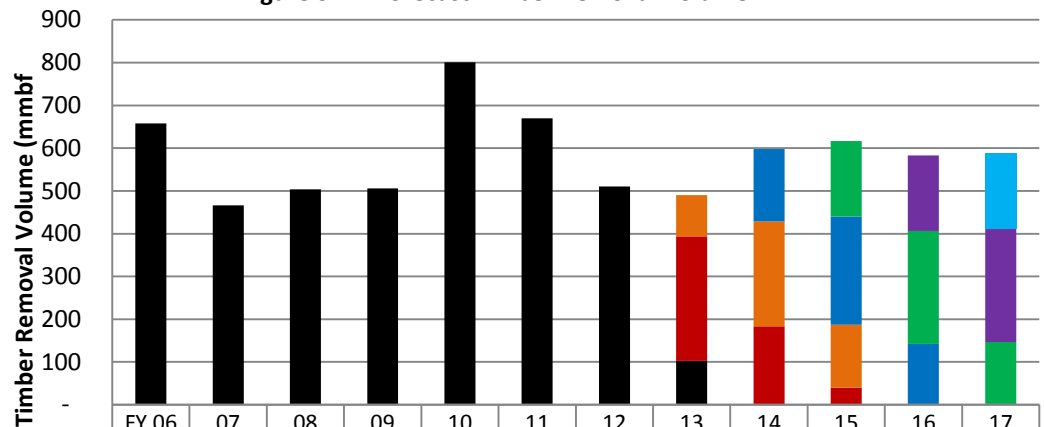
Timber Removal Volume. At the end of September, the Department had 514 mmbf of timber under sales contract, valued at \$144.1 million.

For each Forecast, we survey DNR timber sale purchasers to determine their planned removal timing for the timber volume they have under contract at the time of the survey. This Forecast's survey, conducted in the first half of October, indicates that purchasers plan to harvest 291 mmbf, or 57 percent, of the 514 mmbf remaining under contract this fiscal year (FY 2013) and 183 mmbf (36 percent) and 40 mmbf (7 percent) of the existing inventory in FYs 2014 and 2015, respectively (see **Figure 3.2** for detail).

The survey suggests that a total of 490 mmbf will be removed in FY 2013: 103 mmbf that timber sale purchasers have already removed from July through September, anticipated removals of 291 mmbf from volume under contract as of the end of September, and 97 mmbf in FY 2013 sales volume to be removed this year (see **Figures 3.2 and 3.3**).

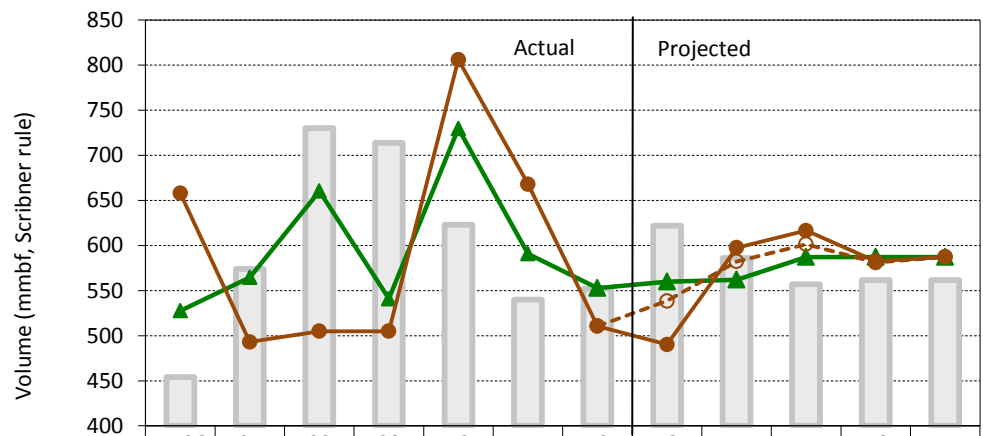
The level and timing of projected timber removal volumes have changed in this Forecast as a result of the purchasers' plans to delay some of their harvests, perhaps in anticipation of higher lumber prices in the coming year. As a result, projected timber removal volumes for the current biennium, 2011-2013, are reduced by 48 mmbf, or nine percent, from the September Forecast.

Figure 3.2: Forecast Timber Removal Volume



Total	FY 06	07	08	09	10	11	12	13	14	15	16	17
Sales in FY 17												176
Sales in FY 16											176	264
Sales in FY 15										176	264	147
Sales in FY 14									169	253	141	-
Sales in FY 13								97	246	148	2	
Sales Under Contract								291	183	40		
Removals to Date	658	466	504	506	801	670	511	103				

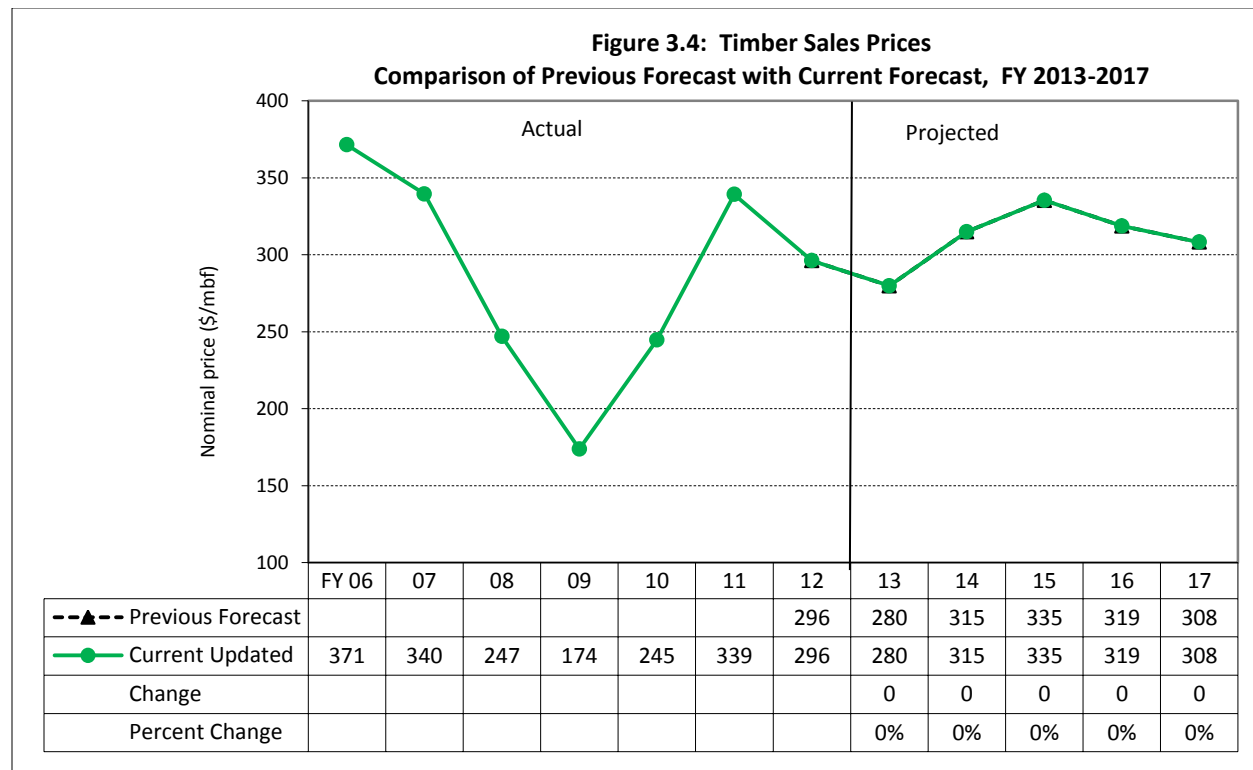
Figure 3.3: Timber Volume - Sales, Removals, and Inventory



Projected volumes across the 2013-2015 Biennium are increased by 30 mmbf, or three percent (see **Figure 3.3**). Projected removal volumes across the 2015-2017 Biennium are increased by 2 mmbf, or less than one percent.

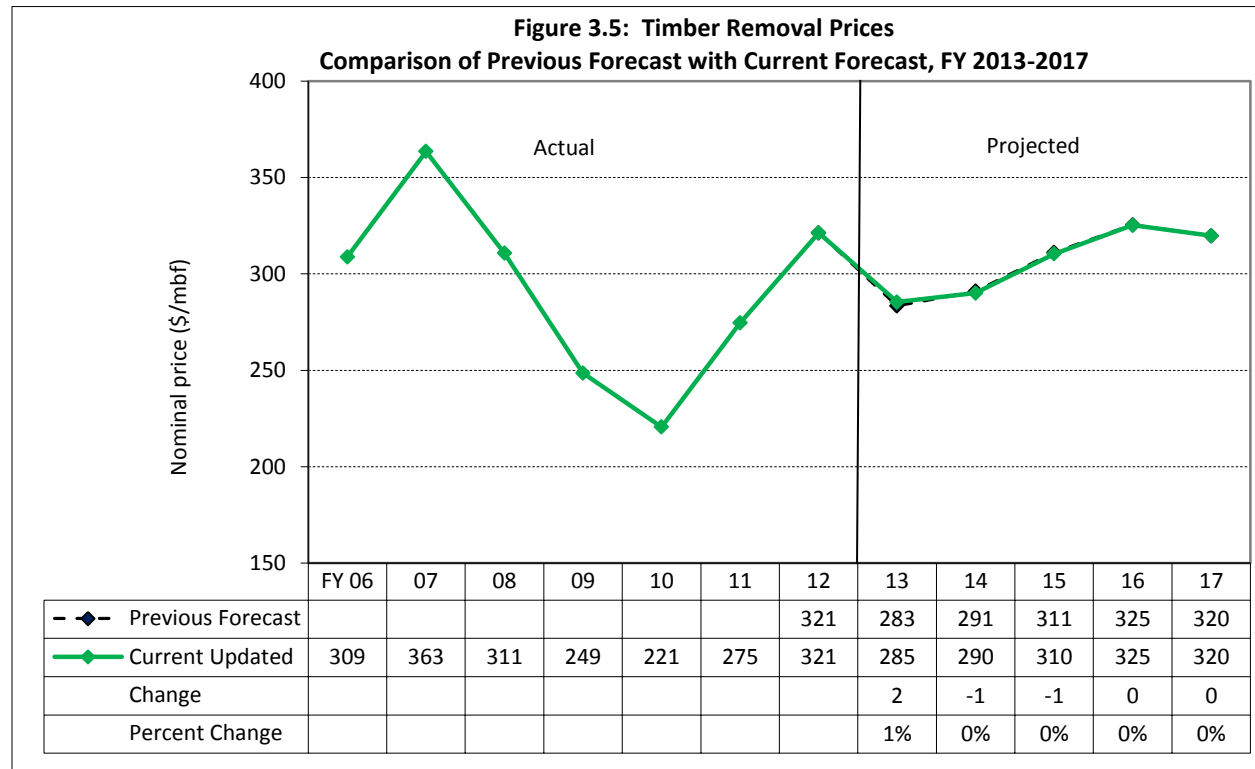
Timber Sales Prices. The results of monthly DNR timber sales (shown in **Figure 2.9** in seasonally adjusted, nominal terms) are quite volatile. In FY 2011, monthly timber sale prices were mostly above \$300/mbf and averaged \$339/mbf weighted by volume, whereas they averaged \$296/mbf in FY 2012 (see **Figure 3.4**).

As discussed in **Part 2**, the U.S. housing market is showing signs of improvement and is likely to continue to strengthen over the forecast period. The timing and magnitude of the recovery in housing construction remain uncertain, but when domestic demand for lumber strengthens, it exerts upward pressure on stumpage prices. With this and predicted timber mix in mind, the FY 2013 average sales price was raised from \$274/mbf to \$280/mbf in the September Forecast (see **Figure 3.4**), and remains unchanged. Timber sales in FY 2013 to date (through October) have averaged \$275/mbf. Sale price estimates in FYs 2014 and 2015 are still \$315/mbf and \$335/mbf, respectively. We predict that prices in FYs 2016 and 2017 will drop off slightly as mill production adjusts to the increased lumber quantities demanded by the growing housing market.



Timber Removal Prices. Timber removal prices are determined by the sales prices and timing of the harvests. They can be thought of as a moving average of previous timber sales prices, weighted by the volume of sold timber removed in each time period. The removal volumes used to calculate the weights are shown in **Figure 3.2**. There is a smoothing out and a lag of timber removal prices compared to timber sales prices. For example, sales prices bottomed at an

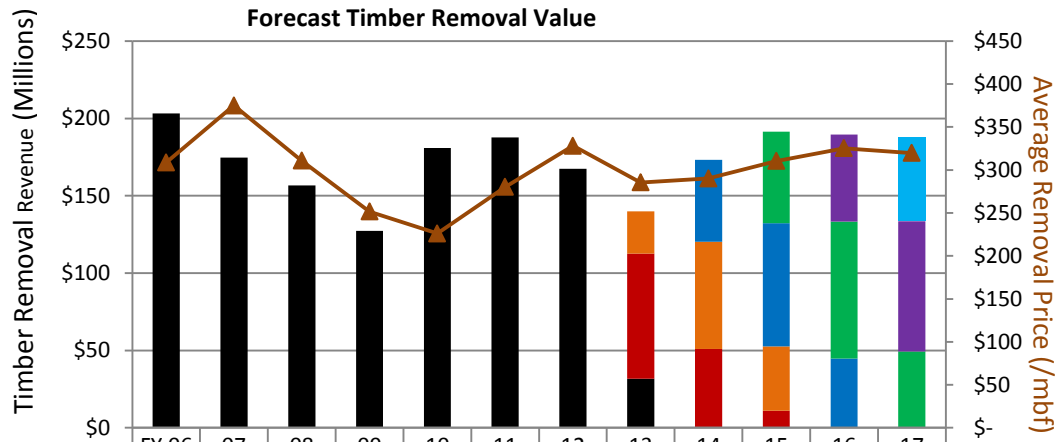
average annual price of \$174/mbf in FY 2009 (see **Figure 3.4**). As shown in **Figure 3.5**, removal prices bottomed out in FY 2010 at \$221/mbf on an annual basis, which was \$47/mbf higher and came a year after the bottom for annual sales prices. FY 2012's average removal price was \$321/mbf. **Figure 3.5** also shows that future removal prices are expected to be nearly the same as in the previous forecast; the minor differences are due to the changes in the anticipated timing of removals discussed above.



Timber Removal Revenues. **Figure 3.6** shows projected annual timber removal revenues and the average removal price for each fiscal year, broken down by the fiscal year in which the timber was sold (“sales under contract” are already sold as of October 1, 2012). About 23 percent (or \$32 million) of the projected timber harvest revenue this fiscal year (FY 2013) has already been harvested, 58 percent (\$81 million) will come from previously sold timber sales currently under contract as of the end of September, and the remaining 19 percent (\$27 million) of revenue will come from removals of timber sold this year.

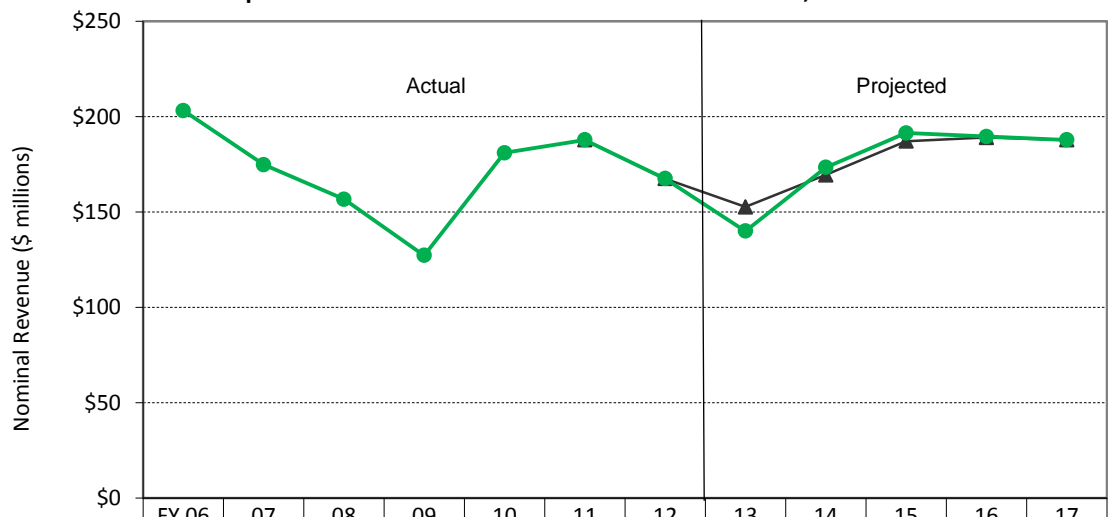
In the current 2011-2013 Biennium, projected timber revenues are revised downward from \$320.1 million to \$307.4, a reduction of \$12.7 million, or four percent, from the September Forecast (see **Figure 3.7**). In the 2013-15 Biennium, forecast timber removal revenues are projected to be up two percent, from \$356.5 million to \$364.7 million. Revenues for the 2015-2017 Biennium are predicted to be \$377.3, up from \$376.8 million.

**Figure 3.6: September 2012 Revenue Forecast
Forecast Timber Removal Value**



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Total	\$203	\$175	\$157	\$127	\$181	\$188	\$168	\$140	\$173	\$191	\$190	\$188
Sales in FY 17												\$54
Sales in FY 16											\$56	\$84
Sales in FY 15										\$59	\$89	\$49
Sales in FY 14									\$53	\$80	\$44	-
Sales in FY 13								\$27	\$69	\$42	0	
Sales Under Contract								\$81	\$51	\$11		
Removals to Date	\$203	\$175	\$157	\$127	\$181	\$188	\$168	\$32				
\$/mbf	\$309	\$375	\$311	\$252	\$226	\$280	\$328	\$285	\$290	\$310	\$325	\$320

**Figure 3.7: Timber Removal Revenues
Comparison of Previous Forecast with Current Forecast, 2013-2017**



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast						187.8	167.5	152.6	169.4	187.1	189.1	187.8
Current Updated	203.2	174.7	156.6	127.2	181.0	187.8	167.5	139.9	173.3	191.4	189.5	187.8
Change								-12.7	3.9	4.3	0.5	0.0
Percent Change								-8%	2%	2%	0%	0%

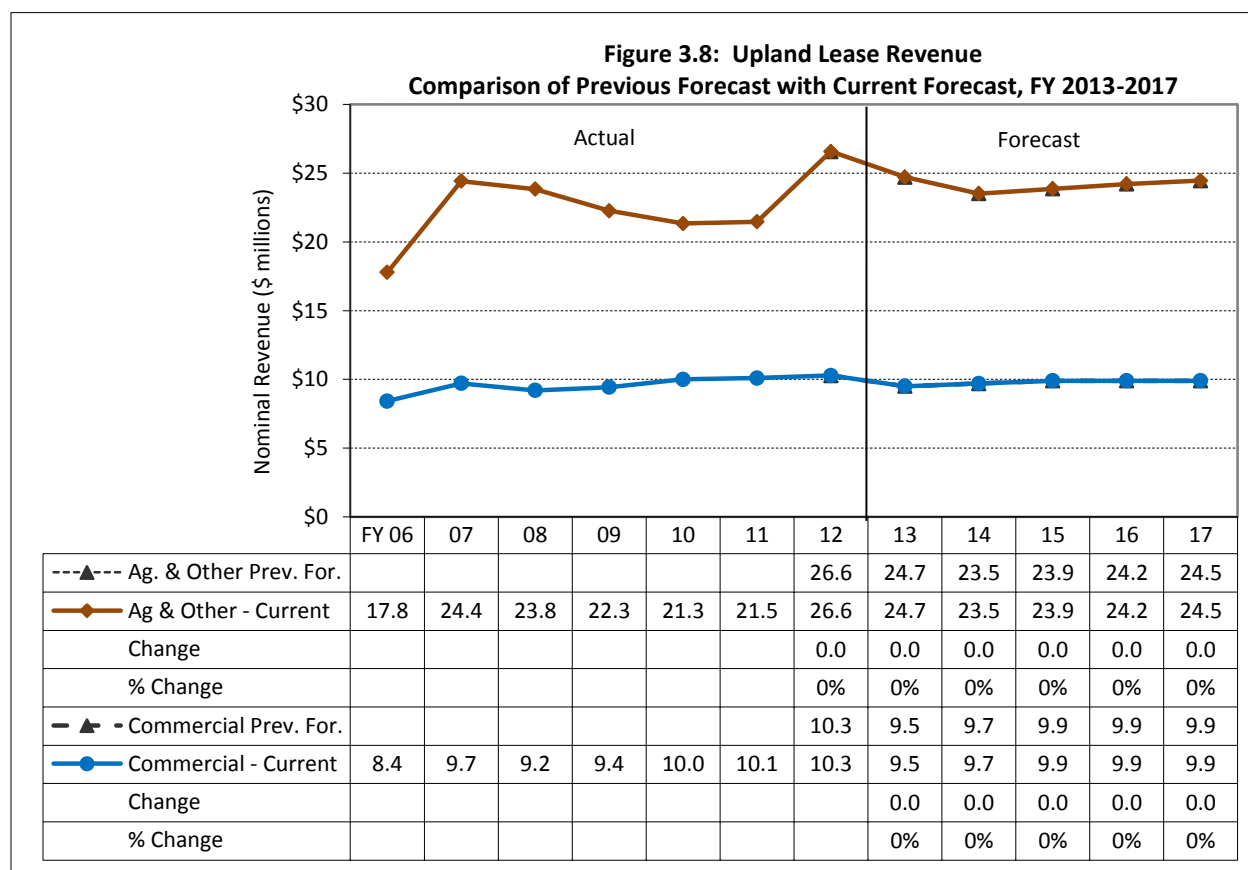
Upland lease revenues

Upland lease revenues are generated primarily from leases and the sale of valuable materials, other than timber, on state trust lands. In the Forecast, upland lease revenues are divided into two categories:

Commercial—Commercial real estate leases.

Agricultural and Other—Agricultural includes dryland cropland, irrigated cropland, and orchard and vineyard leases. “Other” includes grazing, special forest products, special use, communication site, and mineral and hydrocarbon leases, right-of-way easements, and sales of valuable materials other than timber (e.g., rock, sand, and gravel), as well as a few smaller miscellaneous revenue sources.

Commercial. Commercial real estate leases on state trust lands generate a steady source of revenue (see **Figure 3.8**). DNR has been fortunate to be able to maintain a \$10 million level of revenue from commercial leases in the last three fiscal years, FYs 2010-2012, even in the face of a difficult economy that has been hard on commercial real estate.



Projected commercial lease revenues are unchanged in all fiscal years of the forecast period (see **Figure 3.8**). The upside and downside risks to future commercial lease revenue projections are deemed to be in balance.

Agricultural and Other. Revenues from agricultural and other (non-commercial) upland leases were \$21.4 million for FY 2011 and \$26.5 million for FY 2012 (see **Figure 3.8**). A more detailed breakdown of these revenues over the last two fiscal years is shown below:

	<u>FY 2011</u>	<u>FY 2012</u>	<u>Percent of FY 2011-12 Total</u>
Agricultural	\$13,058,000	\$17,471,000	63.7
<i>Irrigated</i>	3,895,000	5,762,000	20.1
<i>Orchard/Vineyard</i>	4,148,000	5,922,000	21.0
<i>Dryland</i>	5,015,000	5,788,000	22.6
Grazing	662,000	850,000	3.2
Special forest products	424,000	567,000	2.1
Special use	1,818,000	2,132,000	8.2
Communication site	3,958,000	3,814,000	16.2
Right-of-Way	433,000	634,000	2.2
Mineral, oil, and gas	282,000	147,000	0.9
Rock, sand, and gravel	595,000	877,000	3.1
Other ⁸	181,000	135,000	0.7
Total	\$21,420,000	\$26,541,000	

FY 2012 was a record year for revenues from agricultural leases—due to a combination of a record year for irrigated crop lease revenues, an excellent year for orchard and vineyard lease revenues, and the second highest year from dryland crop lease revenue. Note in the data above that all three agricultural categories generated revenues between \$5.75 million and \$6 million last fiscal year. Also notable in FY 2012 is a rebound in revenues from rock, sand, and gravel leases, reflecting increasing construction trends in the economic recovery.

This Forecast does not anticipate any changes to the upland lease revenues predicted in the September Forecast. In September, several adjustments were made to the projected revenues in the various agricultural and other uplands leasing categories for FY 2013. Agricultural revenues were raised by about \$1.8 million based on the strong FY 2012 performance and preliminary assessments for FY 2013. A net adjustment of \$1.65 million was made to account for DNR’s decision to drop the proposed sale of communication site improvements. Other smaller positive adjustments resulted in a \$0.8 million increase in projected FY 2013 revenues (see **Figure 3.8**).

Projected revenues in the agricultural and other categories for FY 2013-2017 are \$24.7 million, \$23.5 million, \$23.9 million, \$24.2 million, and \$ 24.5 million, respectively.

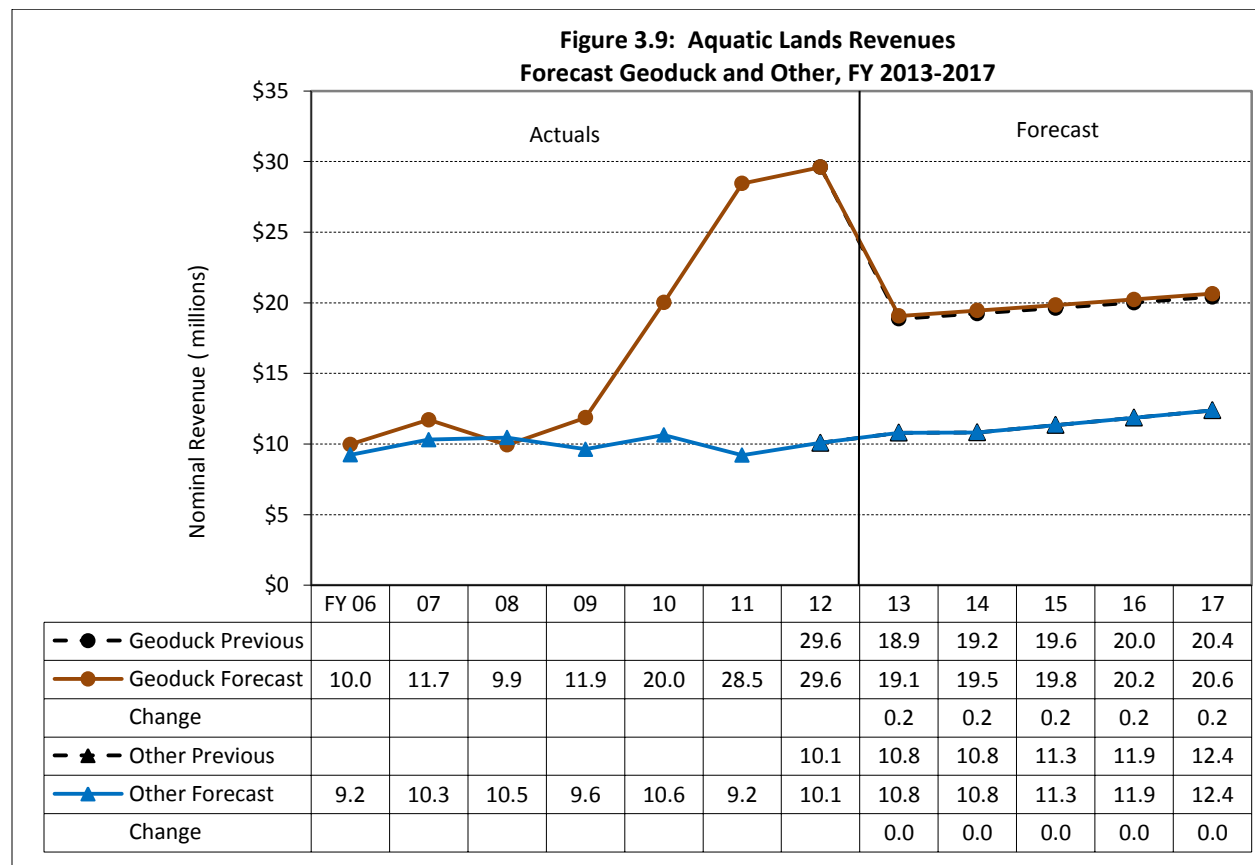
⁸ “Other” is composed of smaller miscellaneous revenue sources including habitat and conservation leases, trespasses, assessment payments, pass-through power charges, biomass, and others.

Aquatic lands revenues

Geoduck Revenues. To account for lower average prices in the last three auctions—and in consideration of the return of price instability to the market—the projected unit price for geoducks in FY 2013 was revised downward from \$9.29/lb. to \$8.75/lb. in the September Forecast. This November Forecast incorporates an improved forecasting methodology and more recent data; as a result, the projected unit price for FY 2013 is increased slightly to \$8.85/lb. As a result of this change, geoduck revenues for FYs 2013-2017 are expected to be \$19.1 million, \$19.5 million, \$19.8 million, \$20.2 million, and \$20.6 million, respectively (see **Figure 3.9**).

However, there are several downside risks that are difficult to forecast:

1. Harvests (and therefore revenues) could be deferred or lost if geoduck beds are closed due to occurrence of the paralytic shellfish poisoning (PSP) toxin.
2. A further slowdown in China's economic growth could lower demand for this luxury consumption item in its predominant end market.
3. In light of WDFW surveys of closed south Puget Sound geoduck tracts showing slowed or declining recovery rates in recent years, and of evidence of active poaching, future commercial harvest levels may be reduced.

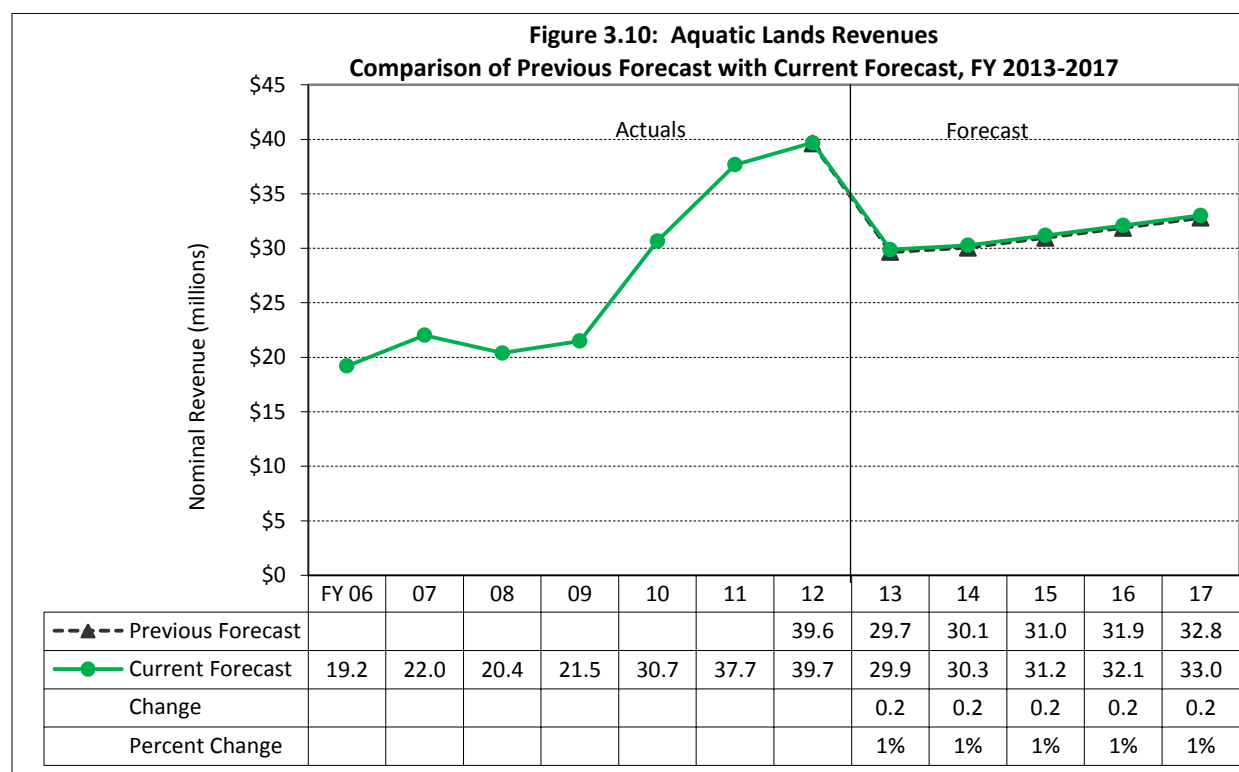


Lease and Other Revenues. DNR manages 2.6 million acres of state-owned aquatic lands for the benefit of the people of Washington. Where appropriate, these aquatic lands may be managed to generate revenue to the state. Besides auctions selling the rights to harvest geoducks, there are several other categories of revenues generated on the state's aquatic lands:

1. Water dependent leases (e.g., marinas and buoys);
2. Non-water dependent leases (e.g., structures related to upland uses);
3. Aquaculture leases (e.g., oyster and salmon "farming");
4. Easements (e.g., powerline rights of way); and
5. Other (e.g., sand and gravel sales and trespass settlements).

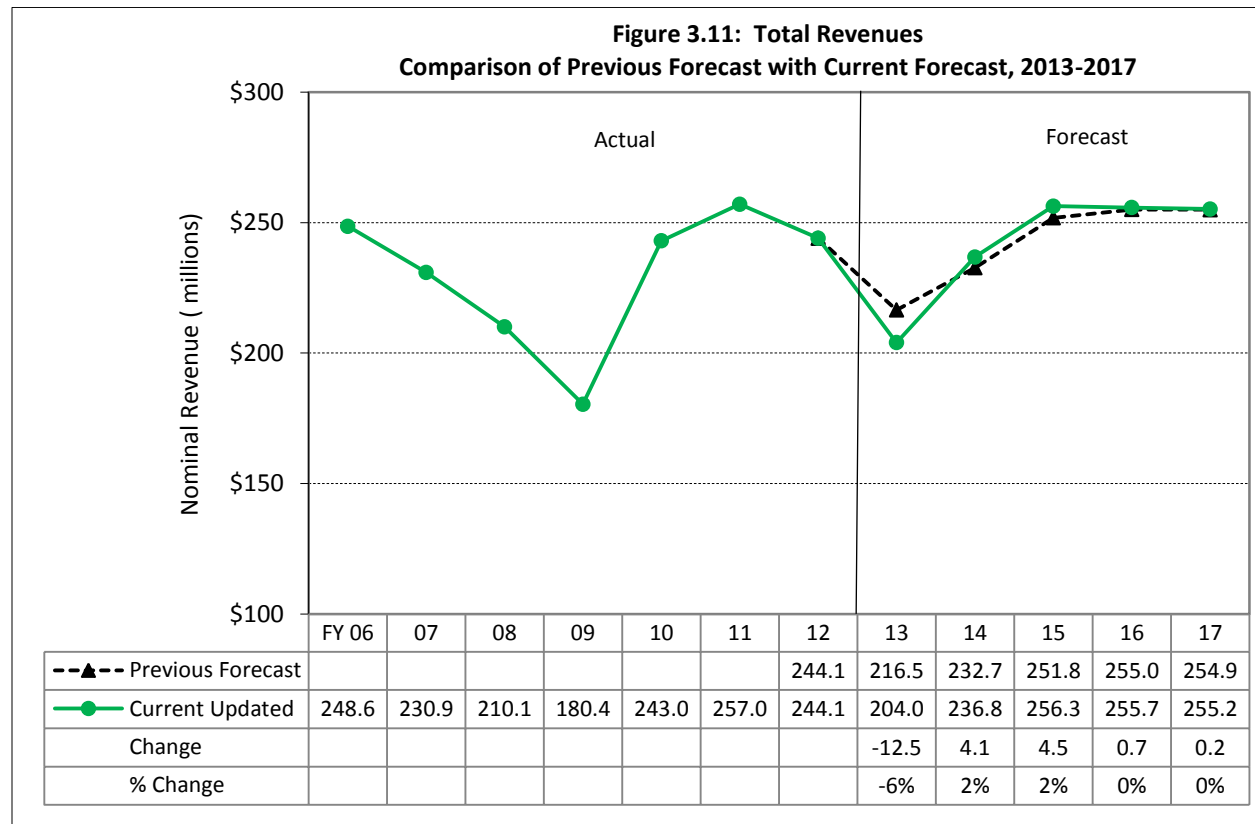
In FY 2012, actual revenues from these other (non-geoduck) aquatic lands categories were \$10.1 million. The current forecast for FY 2013 is unchanged from September. These revenues are projected to total \$10.8 million, \$10.8 million, \$11.3 million, \$11.9 million, and \$12.4 million, respectively (see **Figure 3.9**).

Figure 3.10 shows annual actual and forecast revenues for all aquatic revenue sources (geoduck and other) combined. Total projected revenues for all aquatic lands programs are up \$0.2 million to \$69.6 million for the 2011-2013 Biennium, up \$0.4 million to \$61.5 million for the 2013-2015 Biennium, and up \$0.5 million to \$65.1 million for the 2015-2017 Biennium.



Total revenues from all sources

Total forecast revenues from DNR-managed lands for the current 2011-2013 Biennium (FYs 2012 and 2013) are down from the September Forecast by \$12.5 million, or three percent, to \$448.1 million (see **Figure 3.11**). Forecast revenues for the 2013-15 Biennium (FYs 2014 and 2015) are up from the previous Forecast by \$8.6 million (two percent) to \$493.1 million. Revenues for the 2015-2017 Biennium are up from the previous Forecast by \$0.9 million (0.2 percent) to \$510.9 million.



Some caveats

DNR strives to produce the most accurate and objective projections possible, based on the Department's current policy directions and available information. Actual revenues will depend on future policy decisions made by the Legislature and the Department, as well as on market and other conditions beyond DNR's control. Listed below are issues that could potentially impact future revenues from DNR-managed lands:

U.S. and Global Economic Crisis. The fragile U.S. economy faces various significant challenges—there are still too many unemployed workers, the European financial crisis drags on and many European countries are moving into recession, China's economy is slowing, and Washington D.C. is now turning its attention from the national election to the automatic sequester and tax cuts that loom over the economy. Recent initiatives by the Federal Reserve, Japan's central bank, and the European Central Bank offer some encouragement.

Timber Sales Volume. Falling short of the revised timber sales volume projections due to prospective environmental and policy issues (e.g., riparian management areas, and continued timber harvest deferrals pending implementation of a long-term marbled murrelet conservation strategy) remains the largest risk to the Forecast.

As events and market conditions develop, DNR will incorporate new information into future Forecasts. At this point, we judge the downside to the overall forecast to be greater than the upside because of the risks to the timber sales volume (and therefore to timber removal volume and revenues) as well as the ongoing weakness and vulnerabilities of the U.S. and world economies.

Distribution of revenues

The distribution of timber revenues by trust are based on:

- The value of timber in the inventory (sales sold but not yet harvested) by trust;
- The volumes of timber in planned sales for FYs 2013 and 2014 by trust; and
- The estimated distribution of the sustainable harvest for FY 2015-2017 by trust.

Since a single timber sale can be worth over \$3 million, dropping, adding, or delaying even one sale can represent a significant shift in revenues to a specific trust fund.

Distributions of upland and aquatic lease revenues by trust are assumed to be proportional to historic distributions unless otherwise specified.

Management Fee Deduction. The underlying statutory management fee deductions to DNR as authorized by the legislature are up to 25 percent, as determined by the Board of Natural Resources (Board), for both the Resources Management Cost Account (RMCA) and the Forest Development Account (FDA). In budget bills, the Legislature has authorized a deduction of up to 30 percent to RMCA since July 1, 2005, now in effect through the current 2011-2013 Biennium.⁹

At its April 2011 meeting, the Board adopted a resolution to reduce the RMCA deduction from 30 to 27 percent and the FDA deduction from 25 to 23 percent. At its July 2011 meeting, the Board decided to continue the deductions at 27 percent for RMCA (so long as this rate is authorized by the legislature) and at 23 percent for FDA. At its October 2011 meeting, the Board approved a resolution to reduce the FDA deduction from 23 to 21 percent.

Given this background of official actions by the legislature and the Board, the management fee deductions assumed in this Forecast are:

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>
FDA	23/21*	21	21	21	21	21
RMCA	27	27	27	27	27	27

*23% through 10-10-11, changing to 21% effective 10-11-11

By using 27 percent for the RMCA deduction in FYs 2014-2017, the Forecast assumes that the Legislature will approve RMCA deductions of up to 30 percent for the 2013-2015 and 2015-2017 Biennia in their biennial budget bills, continuing its practice which started in FY 2006.

Changes to the RMCA and FDA management fee deductions will be incorporated into future Forecasts as appropriate to reflect future actions by the Legislature and the Board.

⁹ The Legislature most recently authorized the RMCA deduction of up to 30 percent, making it effective through the entire 2011-2013 Biennium, in the FY 2012 supplemental operating budget, Sec. 927, 3ESHB 2127.

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Revenue forecast tables

Tables 3.1 and 3.2 on the following pages provide Forecast details. **Table 3.1** focuses on the source of revenues and **Table 3.2** focuses on the distribution of revenues. Both tables include historical and projected figures.

Table 3.1: November 2012 Forecast by Source (millions of dollars)

Changes are from September 2012 Forecast										
	Actuals					Forecast				
Timber Sales	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Volume (mmbf)	660	541	730	591	553	560	562	587	587	587
Change					-	-	-	-	-	-
% Change					0%	0%	0%	0%	0%	0%
Price (\$/mbf)	\$247	\$174	\$245	\$339	\$296	\$280	\$315	\$335	\$319	\$308
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
Value of Timber Sales	\$ 163.0	\$ 94.0	\$ 178.5	\$ 200.4	\$ 163.7	\$ 156.7	\$ 177.0	\$ 197.0	\$ 187.2	\$ 181.0
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
Timber Removals	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Volume (mmbf)	504	506	801	670	511	490	598	617	583	587
Change					-	(48)	15	15	2	-
% Change					0%	-9%	3%	3%	0%	0%
Price (\$/mbf)	\$311	\$249	\$221	\$275	\$321	\$285	\$290	\$310	\$325	\$320
Change					\$ -	\$ 2.0	\$ (0.9)	\$ (0.7)	\$ (0.1)	\$ -
% Change					0%	1%	0%	0%	0%	0%
Timber Revenue	\$ 156.6	\$ 127.2	\$ 181.0	\$ 187.8	\$ 167.5	\$ 139.9	\$ 173.3	\$ 191.4	\$ 189.5	\$ 187.8
Change					\$ -	\$ (12.7)	\$ 3.9	\$ 4.3	\$ 0.5	\$ -
% Change					0%	-8%	2%	2%	0%	0%
Lease Revenue	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Agricultural and Other Upland	\$ 23.8	\$ 22.3	\$ 21.3	\$ 21.5	\$ 26.6	\$ 24.7	\$ 23.5	\$ 23.9	\$ 24.2	\$ 24.5
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
Commercial	\$ 9.2	\$ 9.4	\$ 10.0	\$ 10.1	\$ 10.3	\$ 9.5	\$ 9.7	\$ 9.9	\$ 9.9	\$ 9.9
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
Aquatic Lands	\$ 20.4	\$ 20.9	\$ 30.8	\$ 37.7	\$ 39.6	\$ 29.9	\$ 30.3	\$ 31.2	\$ 32.1	\$ 33.0
Change					\$ -	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.2
% Change					0%	1%	1%	1%	1%	1%
Total Lease Revenue	\$ 53.4	\$ 52.6	\$ 62.1	\$ 69.2	\$ 76.5	\$ 64.1	\$ 63.5	\$ 64.9	\$ 66.2	\$ 67.4
Change					\$ -	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.2
% Change					0%	0%	0%	0%	0%	0%
Total All Sources	\$ 210.0	\$ 179.8	\$ 243.1	\$ 257.0	\$ 244.0	\$ 204.0	\$ 236.8	\$ 256.3	\$ 255.7	\$ 255.2
Change					\$ -	\$ (12.5)	\$ 4.1	\$ 4.5	\$ 0.7	\$ 0.2
% Change					0%	-6%	2%	2%	0%	0%

Note: Timber removal revenue includes FIT (forest improvement timber) sale proceeds, timber sales default settlements, and interest and extension charges (approx. \$1-4 million per year).

Excludes Trust Land Transfer, Real Property Replacement Account, and Land Bank property transactions and interest on property replacement funds.

Excludes fire assessments, permits, and fees.

Totals may not add due to rounding.

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Table 3.2: November 2012 Forecast by Fund (In millions of dollars)

Changes are from September 2012 Forecast

	Actuals					Forecast				
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Management Funds										
041 RMCA - Uplands	\$ 32.0	\$ 26.5	\$ 31.8	\$ 33.9	\$ 29.7	\$ 27.6	\$ 32.4	\$ 35.0	\$ 34.0	\$ 33.2
Change					\$ -	\$ (1.4)	\$ 0.6	\$ 0.7	\$ 0.1	\$ -
% Change					0%	-5%	2%	2%	0%	0%
041 RMCA - Aquatic Lands	\$ 8.6	\$ 8.9	\$ 13.9	\$ 17.5	\$ 18.4	\$ 13.3	\$ 13.5	\$ 13.9	\$ 14.2	\$ 14.6
Change					\$ -	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1
% Change					0%	1%	1%	1%	1%	1%
014 FDA	\$ 18.6	\$ 17.3	\$ 25.9	\$ 25.8	\$ 20.9	\$ 15.4	\$ 18.5	\$ 20.9	\$ 21.9	\$ 22.4
Change					\$ -	\$ (1.7)	\$ 0.0	\$ 0.0	\$ (0.2)	\$ -
% Change					0%	-10%	0%	0%	-1%	0%
Total Management Funds	\$ 59.2	\$ 52.7	\$ 71.6	\$ 77.1	\$ 69.0	\$ 56.3	\$ 64.4	\$ 69.8	\$ 70.1	\$ 70.2
Change					\$ -	\$ (3.0)	\$ 0.7	\$ 0.9	\$ 0.1	\$ 0.1
% Change					0%	-5%	1%	1%	0%	0%
Current Funds										
113 Common School Construction	\$ 56.6	\$ 41.5	\$ 47.9	\$ 56.5	\$ 56.5	\$ 53.7	\$ 64.1	\$ 70.1	\$ 68.1	\$ 65.7
Change					\$ -	\$ (2.9)	\$ 1.4	\$ 1.4	\$ 0.3	\$ -
% Change					0%	-5%	2%	2%	0%	0%
999 Forest Board Counties	\$ 52.5	\$ 48.6	\$ 67.9	\$ 70.5	\$ 64.7	\$ 50.2	\$ 59.9	\$ 65.6	\$ 67.0	\$ 68.5
Change					\$ -	\$ (5.6)	\$ 1.2	\$ 1.5	\$ 0.2	\$ -
% Change					0%	-10%	2%	2%	0%	0%
001 General Fund	\$ 3.0	\$ 1.4	\$ 5.0	\$ 4.2	\$ 4.5	\$ 1.8	\$ 2.3	\$ 3.0	\$ 3.4	\$ 3.4
Change					\$ -	\$ (0.3)	\$ (0.1)	\$ (0.2)	\$ (0.1)	\$ -
% Change					0%	-13%	-3%	-5%	-3%	0%
348 University Bond Retirement	\$ 2.3	\$ 3.4	\$ 1.8	\$ 1.3	\$ 0.8	\$ 1.8	\$ 2.3	\$ 2.0	\$ 1.7	\$ 1.9
Change					\$ -	\$ 0.4	\$ 0.3	\$ 0.1	\$ 0.0	\$ -
% Change					0%	34%	15%	7%	1%	0%
347 WSU Bond Retirement	\$ 1.2	\$ 1.6	\$ 1.2	\$ 1.4	\$ 1.8	\$ 1.4	\$ 1.3	\$ 1.3	\$ 1.4	\$ 1.4
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
042 CEP&RI	\$ 3.8	\$ 3.8	\$ 5.6	\$ 4.9	\$ 5.0	\$ 5.5	\$ 4.5	\$ 4.2	\$ 4.2	\$ 4.9
Change					\$ -	\$ 0.3	\$ (0.3)	\$ 0.1	\$ 0.0	\$ -
% Change					0%	6%	-5%	2%	0%	0%
036 Capitol Building Construction	\$ 5.2	\$ 5.7	\$ 8.7	\$ 8.7	\$ 8.8	\$ 4.4	\$ 5.9	\$ 7.0	\$ 7.4	\$ 7.3
Change					\$ -	\$ (0.8)	\$ 0.1	\$ 0.2	\$ 0.0	\$ -
% Change					0%	-15%	2%	2%	0%	0%
061/3/4 Normal (CWU, EWU, WWU, TESC)	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
Other Funds	\$ 0.2	\$ 0.4	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.0	\$ 0.2	\$ 0.2	\$ 0.2	\$ 0.1
Change					\$ -	\$ (0.0)	\$ (0.0)	\$ 0.0	\$ 0.0	\$ -
% Change					0%	-17%	-3%	1%	1%	0%
Total Current Funds	\$ 125.0	\$ 106.5	\$ 138.3	\$ 147.6	\$ 142.3	\$ 118.9	\$ 140.6	\$ 153.5	\$ 153.5	\$ 153.3
Change					\$ -	\$ (8.8)	\$ 2.7	\$ 3.1	\$ 0.4	\$ -
% Change					0%	-7%	2%	2%	0%	0%

(Continued)

Table 3.2 (Continued): November 2012 Forecast by Fund (In millions of dollars)

Changes are from September 2012 Forecast										
Aquatic Lands Enhancement Account	Actuals					Forecast				
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
02R	\$ 11.7	\$ 12.0	\$ 16.8	\$ 20.2	\$ 21.2	\$ 16.6	\$ 16.8	\$ 17.3	\$ 17.9	\$ 18.4
Change					\$ -	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1
% Change					0%	1%	1%	1%	1%	1%
Permanent Funds										
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
601 Agricultural College Permanent	\$ 4.3	\$ 2.9	\$ 6.1	\$ 2.9	\$ 3.2	\$ 3.9	\$ 5.1	\$ 5.4	\$ 4.8	\$ 4.2
Change					\$ -	\$ 0.0	\$ 0.4	\$ 0.2	\$ 0.0	\$ -
% Change					0%	0%	10%	4%	1%	0%
604 Normal School Permanent	\$ 3.1	\$ 2.5	\$ 4.0	\$ 3.0	\$ 3.1	\$ 1.4	\$ 1.8	\$ 2.4	\$ 2.6	\$ 2.4
Change					\$ -	\$ (0.2)	\$ 0.0	\$ 0.0	\$ 0.0	\$ -
% Change					0%	-11%	1%	2%	0%	0%
605 Common School Permanent	\$ 0.2	\$ 0.3	\$ 0.4	\$ 0.2	\$ 0.3	\$ 0.3	\$ 0.3	\$ 0.3	\$ 0.3	\$ 0.3
Change					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
% Change					0%	0%	0%	0%	0%	0%
606 Scientific Permanent	\$ 6.0	\$ 2.8	\$ 5.1	\$ 5.7	\$ 4.6	\$ 6.0	\$ 7.4	\$ 7.3	\$ 6.3	\$ 5.9
Change					\$ -	\$ (0.7)	\$ 0.2	\$ 0.2	\$ 0.0	\$ -
% Change					0%	-10%	2%	3%	1%	0%
607 University Permanent	\$ 0.5	\$ 0.1	\$ 0.7	\$ 0.3	\$ 0.3	\$ 0.7	\$ 0.4	\$ 0.3	\$ 0.4	\$ 0.4
Change					\$ -	\$ 0.0	\$ (0.0)	\$ (0.0)	\$ 0.0	\$ -
% Change					0%	4%	-9%	-1%	0%	0%
Total Permanent Funds	\$ 14.1	\$ 8.6	\$ 16.3	\$ 12.1	\$ 11.4	\$ 12.3	\$ 15.0	\$ 15.7	\$ 14.3	\$ 13.3
Change					\$ -	\$ (0.8)	\$ 0.6	\$ 0.5	\$ 0.1	\$ -
% Change					0%	-6%	4%	3%	1%	0%
Total All Funds										
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Total	\$ 210.0	\$ 179.8	\$ 243.1	\$ 257.0	\$ 244.0	\$ 204.0	\$ 236.81	\$ 256.34	\$ 255.73	\$ 255.18
Change					\$ -	\$ (12.5)	\$ 4.1	\$ 4.5	\$ 0.7	\$ 0.2
% Change					0%	-6%	2%	2%	0%	0%

Note: Excludes Trust Land Transfer, Real Property Replacement Account, and Land Bank property transactions and interest on property replacement funds.
Excludes fire assessments, permits, and fees.
Totals may not add due to rounding.